S128P

Multi-Room A/V Controller

INSTALLATION MANUAL

ELAN®
HOME SYSTEMS

Preface

Purpose of This Manual

This manual provides step-by-step installation instructions and connection examples, along with basic user information for installation and ongoing use of the S128P Multi-Room Controller. This manual is written for the installer of this equipment.

Organization

The following information is contained in this manual:

Safety Information	Provides a comprehensive list of safety practices and procedures allowing for the safe installation and operation of ELAN Home Systems' S128P Multi-Room A/V Controller.
S128P Introduction	Provides an introduction to ELAN Home Systems' S128P Multi-Room A/V Controller, along with system features to include Front and Rear panel controls, indicators and connections, along with a short description of each.
S128P System Design Overview	Provides a system design application overview of the S128P Multi-Room A/V Controller for use in audio, video and automation applications.
S128P Connections	Provides a description of S128P Multi-Room A/V Controller system connections to connections made with an ELAN System Precision Panel (SPP) and direct connections from the S128P to all other components.
Troubleshooting	Provides troubleshooting tables to help fix common discrepancies that may be associated with the S128P Multi-Room A/V Controller.
Specifications	Appendix A provides equipment specifications for the S128P Multi-Room A/V Controller.
Programming	Appendix B provides a basic overview of steps necessary to download programming information from VIA!®TOOLS or ELAN®TOOLS Setup software to the S128P
RS-232 Protocol	Appendix C contains all information necessary to create RS-232 command structures when controlling the S128P with a third-party RS-232 control device.
Rack Mounting	Appendix D provides specifications for rack mounting the S128P Multi-Room A/V Controller.

© ELAN Home Systems 2009 • All rights reserved.

Safety Information

WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN!

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

IMPORTANT SAFETY INFORMATION

Read Information—All the safety and operating information should be read before the appliance is operated.
Follow Information—All operating and use information should be followed.
Retain Information—The safety and operating information should be retained for future reference.
Heed Warnings—All warnings on the appliance and in the operating instructions should be heeded.
Wall Mounting—Mounting of this appliance should be done only by an authorized installer.
Ventilation—The appliances should be situated so that their location or position does not interfere with their proper ventilation. These appliances should never be placed near or over a radiator or heat register.
-These appliances should not be placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
Non-Use Periods—Appliances that are left unattended and unused for long periods of time should be de-energized.
Grounding or Polarization—Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one blade wider than the other blade. A grounding type plug has two blades and a third grounding prong. The polarized wide blade and the third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
Power Cord Protection—Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
Water—Do not use the apparatus near water.

© ELAN Home Systems 2009 • All rights reserved.

WARNING
RISK OF ELECTRIC SHOCK
DO NOT OPEN

Cleaning—Unplug the apparatus from the power outlet before cleaning. Use only a dry cloth to clean the apparatus.

Power Lines—An outdoor antenna should be located away from power lines. When installing an outside antenna system, extreme care should be taken to avoid touching power lines or circuits, as contact with them may be fatal.

Object and Liquid Entry—Never insert objects of any kind through the openings of these appliances, as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Care should be taken so that objects do not fall and liquids are not spilled into the appliance through openings in the enclosure.

Servicing—Do not attempt to service these appliances yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service—These appliances should be serviced by qualified service personnel when:

- A power supply connection or a plug has been damaged or
- If liquid has been spilled into the appliance or objects have fallen into the appliance or
- The appliance has been exposed to water or moisture or
- The appliance does not appear to operate normally or exhibits a marked change in performance or
- The appliance has been dropped or the enclosure damaged.

Replacement Parts—When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards. The Master Control Unit battery should be replaced only after turning the power off and only by an authorized installer.

Safety Check—Upon completion of any service or repairs to this audio product, ask the service technician to perform safety checks to determine that the audio product is in proper operating condition.

Lightning Storms—Unplug this apparatus during lightning storms or when unused for long periods of time.

Attachments and Accessories—Use only attachments/accessories specified by the manufacturer.

Cart, Stand, Tripod, Bracket or Table—Use only with a cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip over.

Disconnect Device—Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain operable.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not in-stalled and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION:

Changes or modifications not expressly approved by Elan Home Systems could void the user's authority to operate the equipment

N2154

© ELAN Home Systems 2009 • All rights reserved.

© ELAN Home Systems 2009 • All rights reserved.

Purpose of This Manual 1
Organization 1
Safety Information 2

Chapter 1: *Introduction*

The ELAN Story 9
S128P Features 10
System S128P Functions & Indicators 12
Front Panel 12
S128P Front Panel Table 13
Rear Panel 14
S128P Rear Panel Table 14

Chapter 2: *S128P System Design Overview*
Introduction 16
Pre-Wire 16
Applications 18
Zone/Sub-Zone Definitions 18
Stereo Zones 19
Stereo Zone w/ Fixed Sub-Zone 20
Stereo Zone w/ Fixed/Variable Sub-Zone 21
Stereo Zone w/ Mono Sub-Zone 23

Chapter 3:*S128P Connections*

SPP System Precision Panel 25
Connections When Using an ELAN SPP Precision Panel-Rear 26
VIA! Touch Panel Connections 27
Olé Film Interactive Touchpads 29
"A" Punchdown Locations 29
"B" Punchdown Locations-16V 30
"B" Punchdown Locations-12V 31
"C" Punchdown Locations 32
Z•Pad Connections 33
"C" Punchdown Locations 33
IR Receiver Connections 33
Sense Input Connections 34
Programmable Trigger Connections 34
LINK IN/LINK OUT Connections 35
External Power Connections 36
RS-485 Expansion Connections 36
Switches 37
INT 12V-EXT 16V Switch 37
ZNET/VNET Switch 37
SS/SC4-NO SS/SC4 Switch 38
Connections When Using an ELAN SPP Precision Panel-Front 39
VIA!NET Connection 39
EXT IR Connections 39
Sense Input Connections 39
SS/SC4 Connection 40
ZONE 1-8 Connections 40
Triggers Connections 41
Power Connections 42

© ELAN Home Systems 2009 • All rights reserved.

S128P Connections When NOT Using an ELAN SPP Precision Panel 43
Sense Input Connections 43
VIA! Touch Panel Connections 44
Olé Touchpad Connections 45
Keypad Connections 45
Local Source Connections 46
External IR Connections 46
VSE2 Electronic Volume Control Connections 47
C2 Communications Controller Connections 48
Source IR Output Connections 49
ALL IR OUT Port Connections 49
Unit Trigger Output Connections 50
Zone Trigger Output Connections 50
Audio/Video Connections 51
Loop Output Connections 51
ZONE OUTPUTS 52
Variable Output Connections 52
Fixed Output Connections 53
Fixed/Variable Output Connections 54
ELAN RS-232 Ports 55
SC-4 RS-232 System Controller 55
SS1 System Station 55
PV12 Precision Video Panel 56
Advanced Video Switching-Composite Video 56
V8 Video Controller 65
VIA!®Quad Video Controller 66
Advanced Video Switching-Component Video 67
V85 Component Video Controller 67
System Expansion 68
Unit I.D. DIP Switches 68
Multi-Chassis Connections 69
IR/RS-485/RS-232 69
Multi-Chassis C2 Connections 70
Multi-Chassis Audio/Video Connections 71

Chapter 4: *Operations and Settings*
ELAN Keypad DIP Switch Setting's 72

Chapter 5: *Troubleshooting* 73

Appendix A: Specifications 82

Appendix B: Programming 84
VIA!TOOLS or ELANTOOLS Downloading to S128P 84
S128P IR Codes 84

Appendix C: RS-232 Serial Control Commands 90
General Information 90
S128P Communication Port Settings 90
RS-232 Commands 91

© ELAN Home Systems 2009 • All rights reserved.

Appendix D: Rack Mounting 110

Warranty ..... Back Page

© ELAN Home Systems 2009 • All rights reserved.

S128P
Multi-Room A/V Controller

Items in package:

- **S128P Multi–Room A/V Controller**
- **Rack Mount Brackets**
- **Power Cord**
- **Installation Manual**

© ELAN Home Systems 2009 • All rights reserved.

Chapter 1: Introduction

The S128P is the culmination of fourteen years of ELAN experience in the design and perfection of multi-source/multi-zone controllers. Incorporating the features and reliability that has made ELAN the fastest-growing manufacturer of multi-room A/V products, the S128P is ELAN's most powerful and flexible multi-source/multi-zone controller to date. The S128P is a twelve-source eight-zone preamp controller with on-board video switching. Up to four S128Ps can be linked for a total of thirty-two zones. The S128P can be controlled by IR or Serial commands, and works with ELAN VIA!® Touch Panels, Olé™ Film Interactive Touchpads, keypads, and/or IR receivers, as well as interfacing with the VIA!®SR1 Sense/Relay Module, and SS1 System Station.

This unit has been designed with ultimate flexibility in mind. Multiple control methods combine with expandability to offer the perfect solution for larger audio/video and automation control systems. Local source inputs allow devices located in a specific zone to be heard in and controlled from that zone, while advanced trigger options allow flexible automation opportunities.

The S128P can switch Composite video, Component video, or both, simultaneously. High Definition video sources, like HDTV and Progressive Scan DVD players, can now be routed throughout the home as well as traditional Composite video sources like VCRs and CCTV cameras.

The S128P is loaded with all the features a custom installer looks for in a high-end multi-room controller, including audio/video signal sensing and system-status feedback, 12 source-specific IR ports, 2 IR 'All' ports, an External IR Input, 6 Sense inputs, 8 Trigger outputs plus a Unit Trigger output, a Music-On-Hold output, Page/Doorbell audio and Trigger jacks for easy integration with ELAN's C2 Communications Controller, and Serial In/Out ports for RS-232 control of the S128P. The SPP Precision Panel makes all system connections quick, neat and reliable!

The ELAN Story

Located in Lexington, KY, USA, ELAN Home Systems has designed innovative multi-room audio/video systems since 1989. ELAN systems were the first to integrate music, intercom and TV distribution features that used the homeowner's stereos, televisions and telephones to create the whole-house entertainment experience. These systems allow people to move from room to room, controlling centrally located equipment with ease.

ELAN's product line includes:

- Power Amplifiers
- Multi-Zone Pre-Amps
- Intelligent Keypads
- In-Wall LCD Color Touch Panels
- Wireless LCD Color Touch Panels
- Film Interactive Touchpads
- In-Wall and In-Ceiling Speakers
- Outdoor Speakers
- System Controllers
- Volume Controls
- Telephone-Based Intercom Controllers
- Video Switchers
- Digital Music and DVD Management Systems
- Satellite Radios
- Accessories for Home Systems Installation

© ELAN Home Systems 2009 • All rights reserved.

S128P Features

• More Sources

• 12 Audio Inputs
Connect up to 12 audio or A/V components!

• 16 Video Inputs/16 Video Outputs
- Switch independently or in synchronization w/ audio.
- Switch Composite video, Component video, High Definition video or a combination.

• 8 Local Source Inputs
Connect a 'private' local source from each zone and control it with that zone's keypad or touch panel.

• 32 Zone Capability

Link up to 4 S128Ps to independently control up to 8, 16, 24, or 32 zones.

• Buffered Loop Outputs

Easily share sources w/ Home Theaters, etc.

• Variable & Fixed Zone Preamp Outputs

Each zone has both Variable and Fixed outputs for flexible system configuration.

• Independent Bass, Treble, Page Volume, & Max Volume for Each Zone

Customize the sound for each zone.

• Volume and EQ Memory Retention

Keep custom settings for each zone.

• Dynamic Range Compression

Dynamic Range Compression (DRC) makes loud audio passages quieter and quiet passages louder. Ideal for night-time listening and Classical music. Available independently for each zone.

• Audio & Video Source-Sensing for System Feedback

Advanced signal sensing for source and zone status feedback and automated sequences.

• +/- 6dB Source-Leveling

Optimize the input level of each source (including Local source) for smooth source switching. One dB steps for fine-tuning.

© ELAN Home Systems 2009 • All rights reserved.

• Advanced IR Routing
• 12 Source-specific IR Output ports
• 2 IR 'ALL' Output ports
• 1 External IR IN port can be routed out any or all IR Output ports

• Blue Vacuum Fluorescent Front Panel Display
• Shows zones/sources selected, EQ, Do-Not Disturb/ Whole-House Music settings, etc.
• Display timeout & configurable Brightness

• Full ELAN Control Capability
• Use with any ELAN keypad or touch panel!
• IR or RS-232 Control
• Uses VIA!TOOLS or ELANTOOLS setup software for all programming!

• Do-Not-Disturb
Temporarily disable Page, Doorbell, WHM, and Groups in any zone.

• Whole-House Music
Play one source throughout the house with the touch of a button.

• Groups
Link zones into one of four Groups per chassis!

• Six Sense Inputs
Trigger complex IR sequences and automated functions using VIA! Touch Panels!

• Eight Zone-Specific Triggers/One Unit Trigger
Turn on a specific amp channel when a zone is activated or turn on the whole amp!

• Rear Panel Expansion Ports
Easily route IR and RS-485 data between multiple S128Ps.

• Rack-Mount Brackets Included
Allows S128Ps to be rack mounted

• Available in 240 Volt
For export: Models S128P240 and S128PR240

• ETL® Listed and CE® Approved

© ELAN Home Systems 2009 • All rights reserved.

System 12 Functions & Indicators

Front Panel

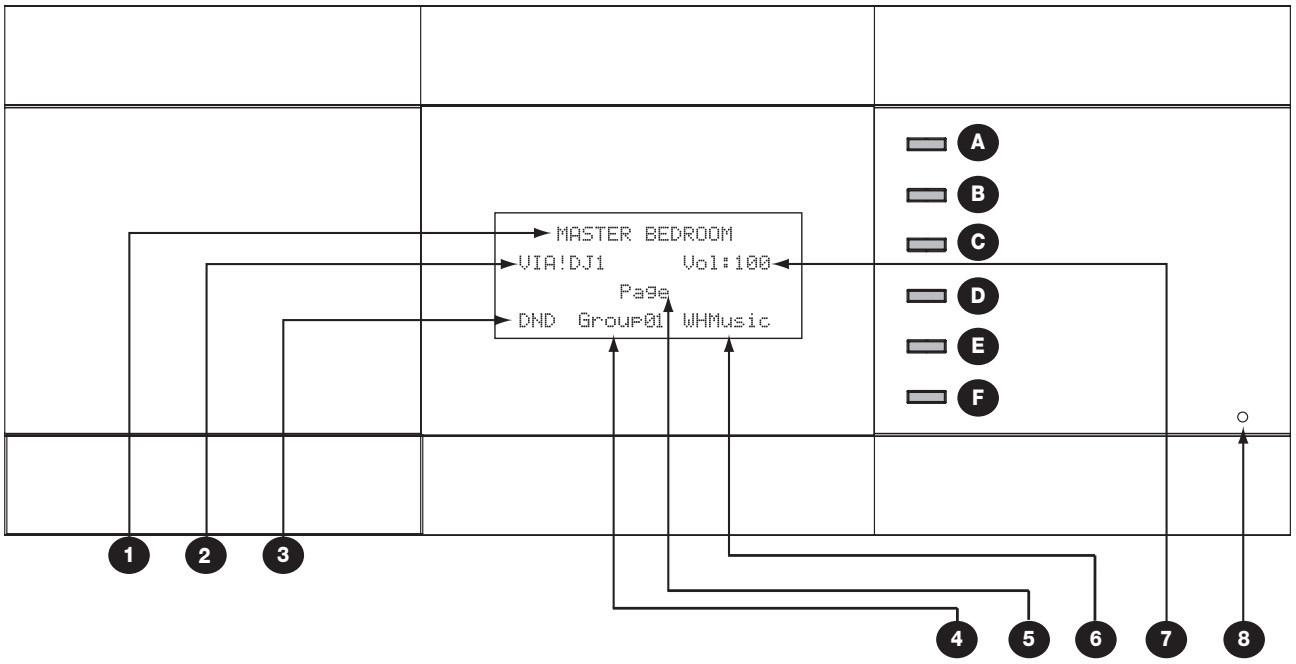


Figure 1-1: S128P Front Panel Controls & Display

© ELAN Home Systems 2009 • All rights reserved.

Item	Function
1	**Zone Selected** Displays which zone is currently selected
2	**Source Selection** Displays source currently selected in a zone
3	**DND** DND displayed if selected zone is in Do-Not-Disturb
4	**Group Status** Displays if a zone is currently in Group Mode
5	**Page/Doorbell** Displays Paging and Doorbell activity
6	**WHM** WHM is displayed if the selected zone is in Whole-House Music mode
7	**Volume Status** Displays a Zone's Volume settings
8	**Power LED** Displays Power status

Item	Function
A	**ZONE** Press to select a zone to be controlled • **System Off**-Press and hold **ZONE** button for 1.25 seconds
B	**SRC** (Source) Press to select a source to play in the selected zone • **Zone Off**-Press and hold **SRC** button for 1.25 seconds
C	**DND** (Do-Not-Disturb) Press to enable/disable Do-Not-Disturb for the selected zone • Diagnostics-Press and hold **DND** button for 2.5 seconds
D	**WHM** (Whole House Music) Press to enable/disable Whole-House Music
E	**V Up** (Volume Adjust) This button increases volume in selected zone
F	**V Down** (Volume Adjust) This button reduces volume in selected zone

Table 1-1: S128P Front Panel Controls & Display

© ELAN Home Systems 2009 • All rights reserved.

Rear Panel

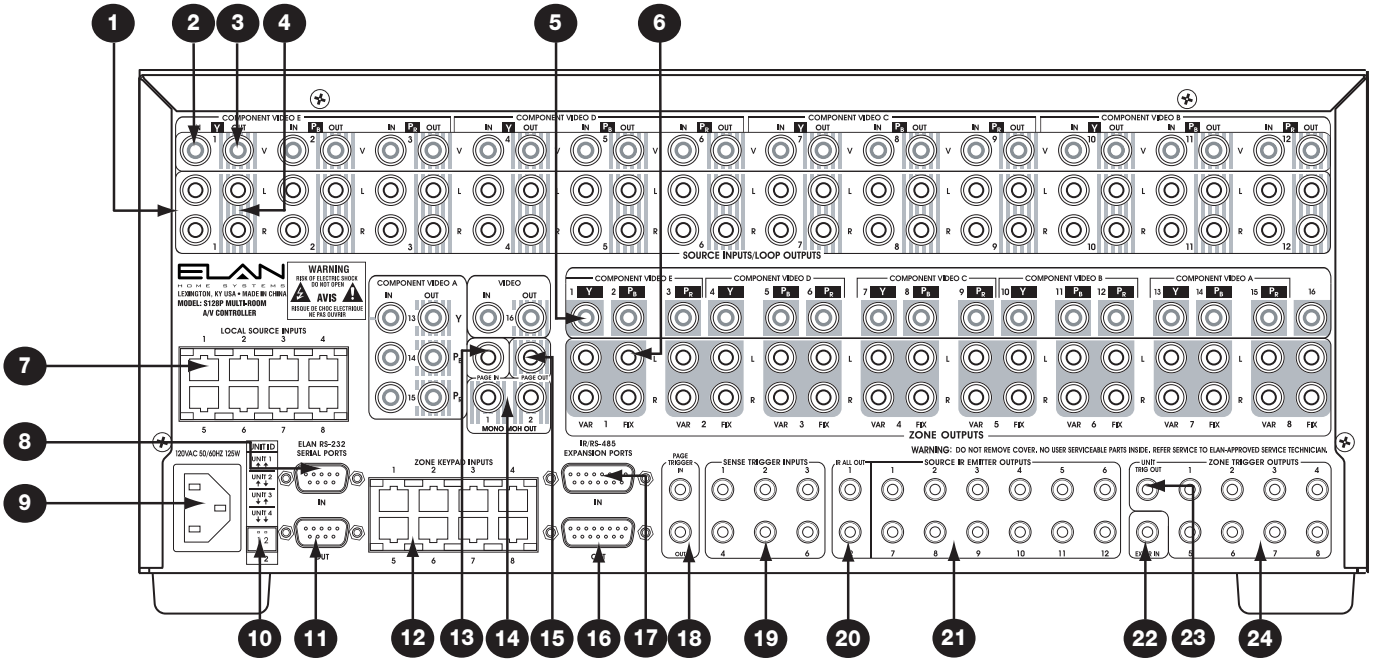


Figure 1-2: S128P Rear Panel Connections

© ELAN Home Systems 2009 • All rights reserved.

Item#	Function	Item#	Function
1	**Source Audio Inputs** Connect source audio	13	**Page Input** Connect PG/DB Output from C2 Communications Controller
2	**Source Video Inputs** Connect source Composite video	14	**MOH Output** Connect to C2 MOH (Music On Hold) Input
3	**Source Video Loop Outputs** Use for shared video components or linked chassis	15	**Page Output** Connect to additional S128Ps
4	**Source Audio Loop Outputs** Used for shared audio sources or linked chassis	16	**IR/RS-232 Expansion Out** Connect to SS1 or additional S128Ps
5	**Zone Video Outputs** Connect to TVs, VIA! Touch Panels, etc.	17	**IR/RS-485 Expansion In** Connect Expansion Port Out to Expansion Port In if using multiple S128Ps
6	**Zone Audio Outputs** Connect to system Amplifier. Fixed and Variable Outputs available	18	**Page Trigger In/Out** PG Trigger In from C2 PG Trigger Out to additional S128Ps
7	**Local Source Inputs** Connect remotely located "Local" sources	19	**Sense Trigger Inputs** Connect ELAN™SENSE Sensors for automated functions
8	**ELAN RS-232 Input** Connect a SS1 System Station or SC1. Also for downloading VIA!TOOLS or ELANTOOLS program files	20	**IR All Out** Connect IR to system sources that do not require source-specific IR
9	**AC Power** Connect to AC Power	21	**Source IR Emitter Outputs** Source-specific IR Outputs
10	**Unit ID Dipswitches** Configure Unit identity 1-4	22	**External IR Input** Connect non-system keypads or IR receivers to control system sources
11	**ELAN RS-232 Output** Connect to additional S128P Chassis	23	**Chassis Trigger Output** Sends a 12 VDC Trigger whenever any zone of chassis is active
12	**Zone Keypad Inputs** Connect ELAN Keypads, VIA!s, or IR Receivers	24	**Zone Trigger Outputs** Sends a 12 VDC Trigger when a specific zone is active

Table 1-2: S128P Rear Panel Connections

© ELAN Home Systems 2009 • All rights reserved.

Chapter 2. System Design & Applications

System Design

The first step to a good design is to map the system. It is advisable to mark up a copy of the house floor plan with speaker, keypad, touch panel, volume control, and equipment locations etc. Make sure that all locations are decided upon before pre-wiring commences so that all necessary wiring and installation hardware is in place. This unit will be interfacing with other components such as amplifiers, source components, communications controllers, serial controllers, and user interfaces, so it is essential that ALL system components are accounted for prior to the pre-wire stage.

Secondly, make a detailed list of all components. Include source equipment, keypads, touch panels, volume controls, amplifiers, communications gear and the S128P itself. Be sure to include necessary electrical boxes, structured wiring enclosures, telephone lines, rough-in brackets, patch cords, power supplies, etc.

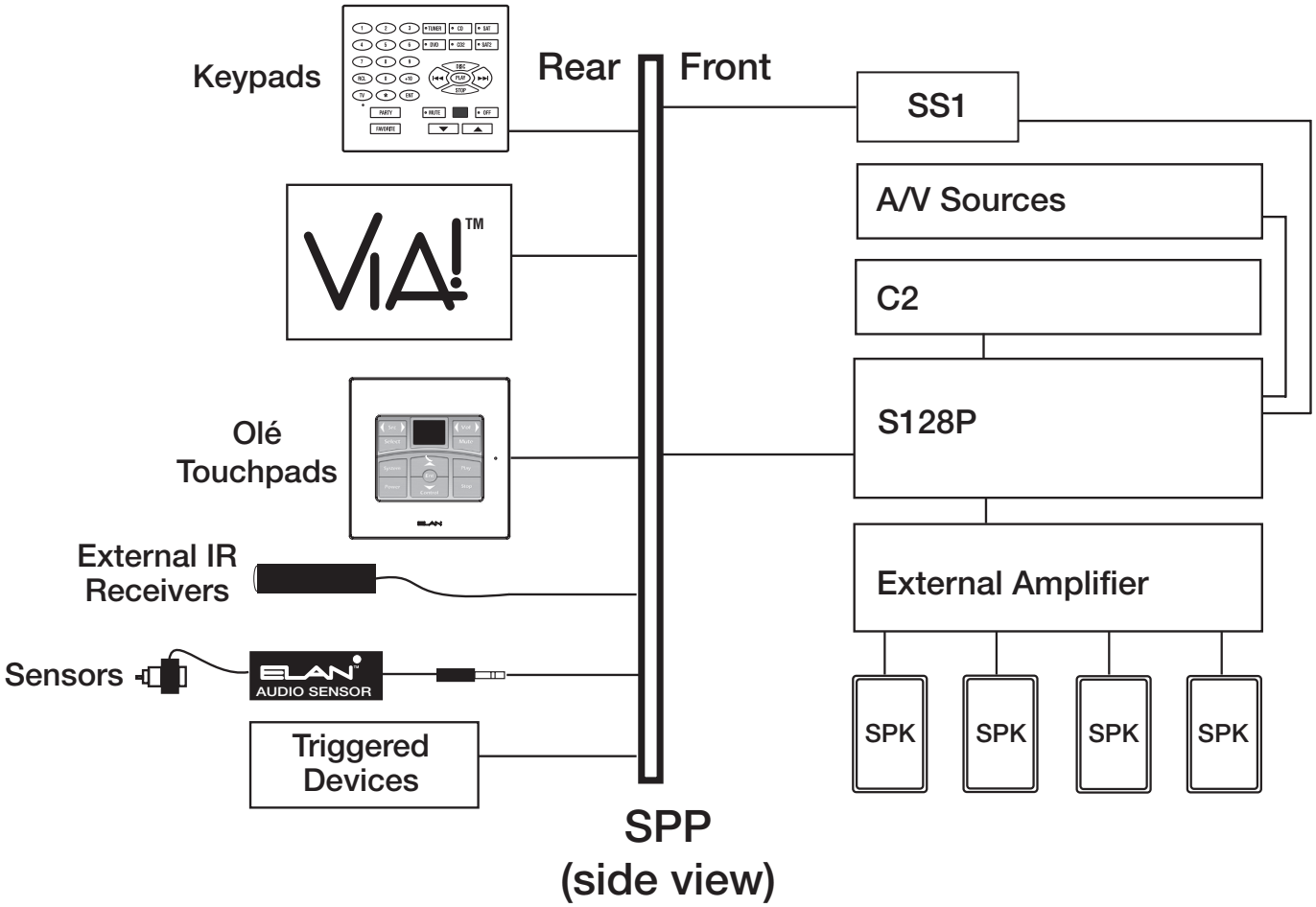


Figure 2-1: System Design

Pre-Wire

This section will explain the specifics of pre-wiring for an S128P system. Care should be taken at this stage to ensure a properly operational system. Most system wiring is “home-run” from the device being installed (a keypad, for example) back to the equipment location, or “head-end”. Make sure to plan for the future when pre-wiring! It is often advantageous to pull coax along with Cat-5 to facilitate an upgrade from keypads to VIA! Touch Panels.

© ELAN Home Systems 2009 • All rights reserved.

VIA! Touch Panels

- Cat-5
- 16-18 AWG 2 conductor wire (on runs greater than 110 ft.)
- RG-6 or RG-59 coaxial cable

ELAN Keypads

- Cat-5

IR Receivers

- Cat-5

Volume Controls

- Cat-5
- 16-18 AWG speaker wire

Use stranded, twisted pair speaker wire between amplifiers and volume controls, and between volume controls and speakers. Use Cat-5 to power electronic volume controls and for volume control override when used with a C2 Communications Controller.

Speakers

- 16-18 AWG speaker wire

Use stranded, twisted pair speaker wire between amplifiers and speakers.

Local Source/LSWP

- Cat-5

Local Sources connect to the S128P using an LSWP Local Source Wall Plate with Cat-5 (see page 47).

Remotely Located Sources

- Cat-5
- RG6 or RG59 coax (if necessary)

Remotely located sources connect to the S128P using an ELAN RSWP with Cat-5.

C2 Communications Controller

- Cat-5

When using an ELAN C2 Communications Controller, run Cat-5 for telephones. Run Cat-5 for Door Stations. See the C2 manual for details. Note that only two wires are used to connect between the C2 and the door station. The remaining wires of the Cat-5 are used for the DSC3's camera functions (the camera does not interact with the C2).

Serial Devices

- Cat-5 or Serial Cable

Run Cat-5 or serial cables between RS-232 controllers and the S128P.

Sense Inputs

- Cat-5 (3 conductors used)

Use Cat-5 to extend sensor leads, if necessary.

System Video

- RG-6 coax for RF or base-band video.
- RG-59 coax for base-band video only.

Use coaxial cable to distribute video to TVs and VIA! Touch Panels throughout the house.

System Audio

- RCA Interconnect Cables

© ELAN Home Systems 2009 • All rights reserved.

Applications

This section describes typical applications using the S128P in audio/video/automation installations. These are all basic in nature and should be used for guideline purposes only. Each application can be augmented as needed for individual circumstances.

Zone/Sub-Zone Definitions

A zone is defined as an area within a system that has independent source selection ability. A zone may be one room, or several combined areas. A sub-zone is a part of a zone - it shares source selection - but is not independent. Typically, sub-zones use volume controls for volume up/down.

8-ZONE SYSTEM EXAMPLE

4 Stereo Zones, 2 Stereo Zones with Mono Sub-Zones, 2 Mono Zones. Total 16 amp channels used.

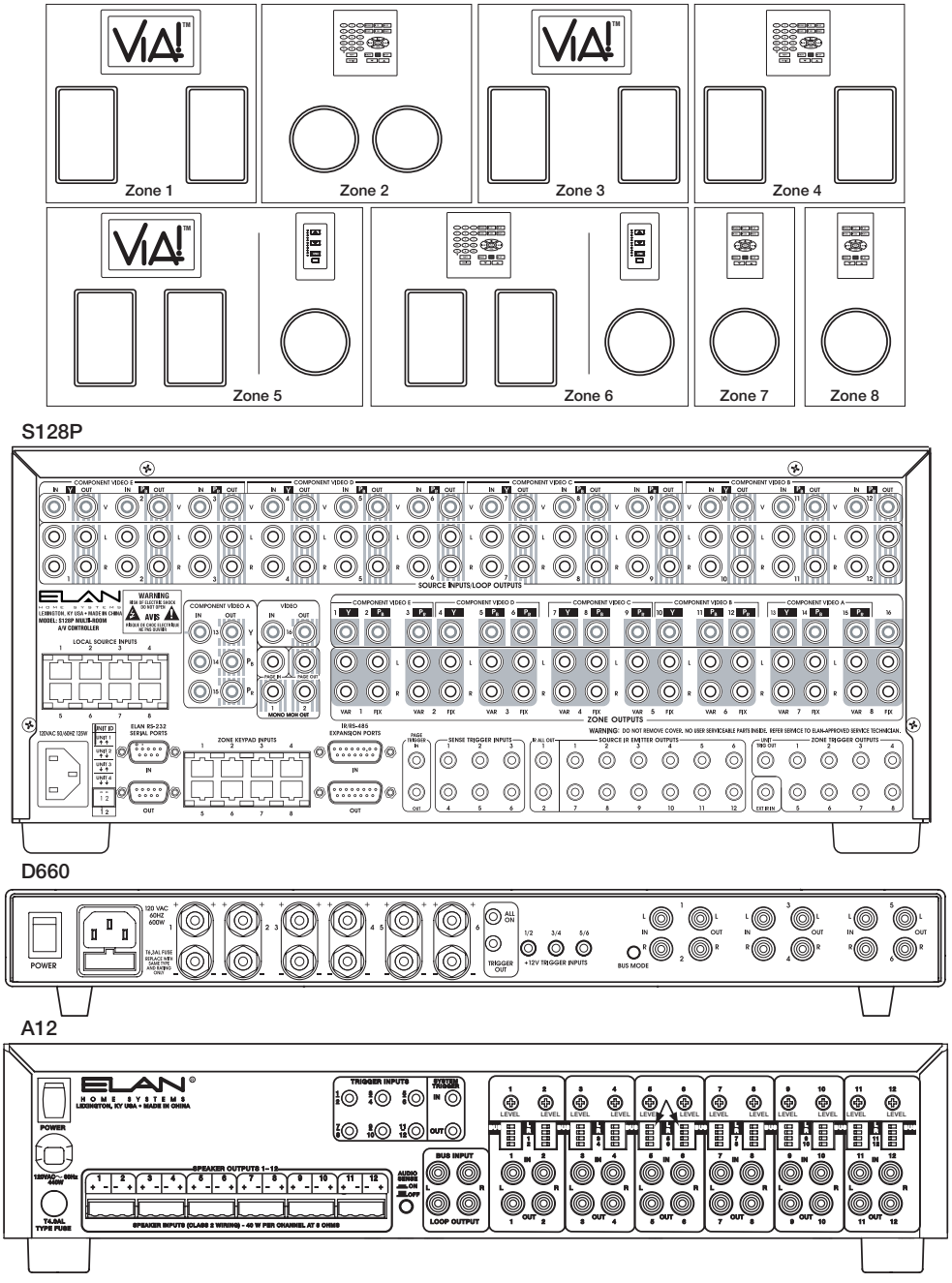


Figure 2-2: 8-Zone System

© ELAN Home Systems 2009 • All rights reserved.

Stereo Zones

To create an independent stereo zone, simply connect the S128P's Variable Zone Audio Outputs to a pair of amplifier channels. Volume will be controlled using IR or RS-232 commands at pre-amp level. Any and all speakers connected to these channels will ramp volume up/down together. Use a VIA! Touch Panel, Olé Touch Pad, or a handheld remote control to control functions (including volume) in zones with this configuration.

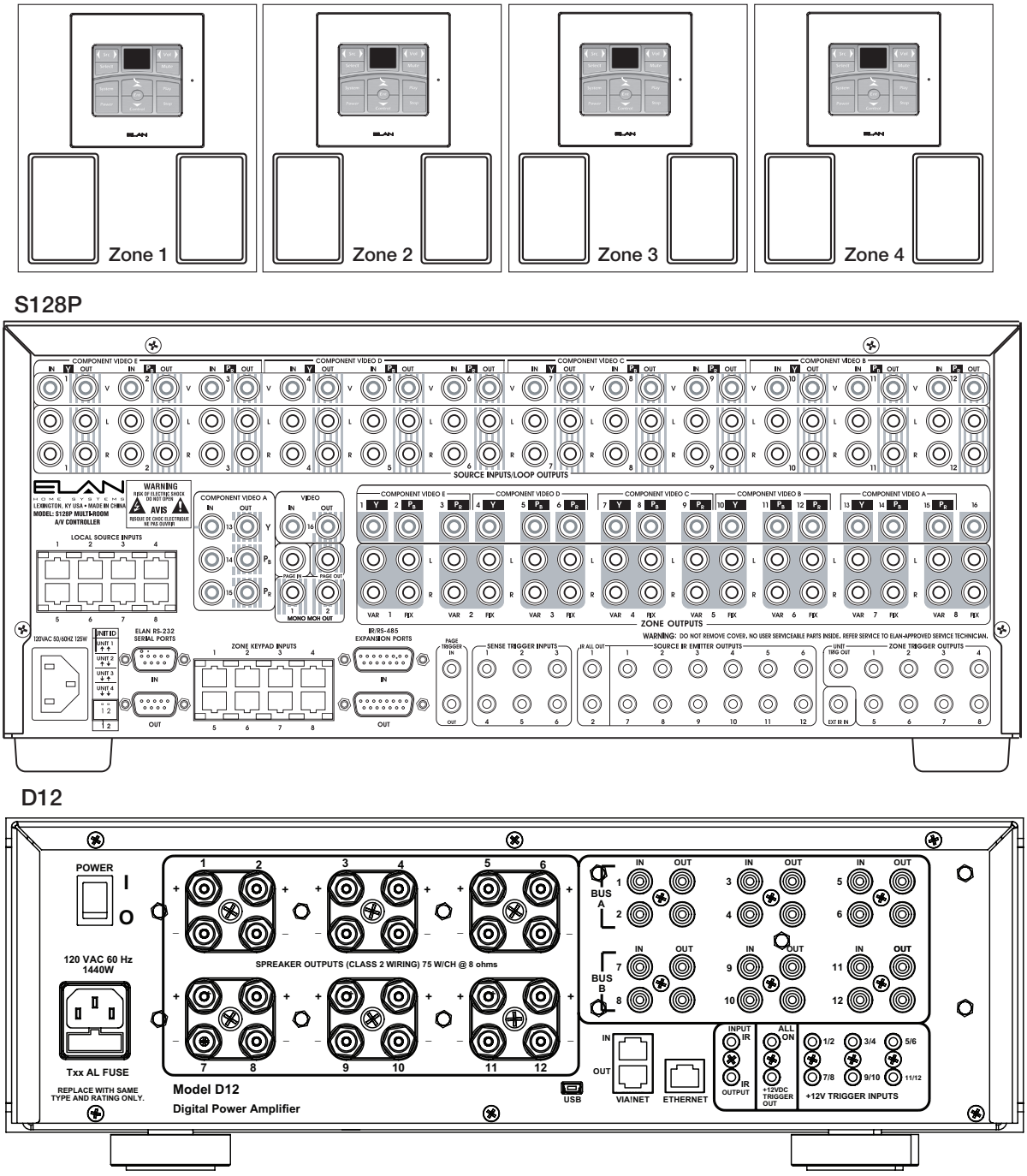


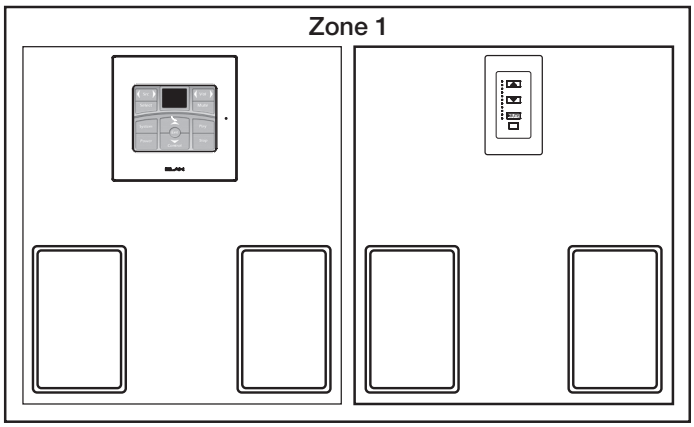
Figure 2-3: Stereo Zones

© ELAN Home Systems 2009 • All rights reserved.

Stereo Zone w/ Stereo Sub-Zone Fixed Output

Many areas of the home are ideal for zone/sub-zone configuration. Examples include Master Bedroom/ Master Bath or Kitchen/Dining Area. In this application, only two amp channels are used. Connect the Fixed Zone Audio Output to a pair of amp channels. Use two impedance matching volume controls on the amplifier's speaker outputs to maintain independent volume control capabilities in each room. At least one controlling device (touch pad, touch panel) must be installed to control the zone. Volume up/down will be controlled with the volume control located in each part of the zone. If using ELAN electronic volume controls, system and source control is possible using a hand-held remote control. This application uses the least amount of amplifier channels possible.

Note: Fixed Zone Audio Outputs do not have DRC or EQ capabilities.



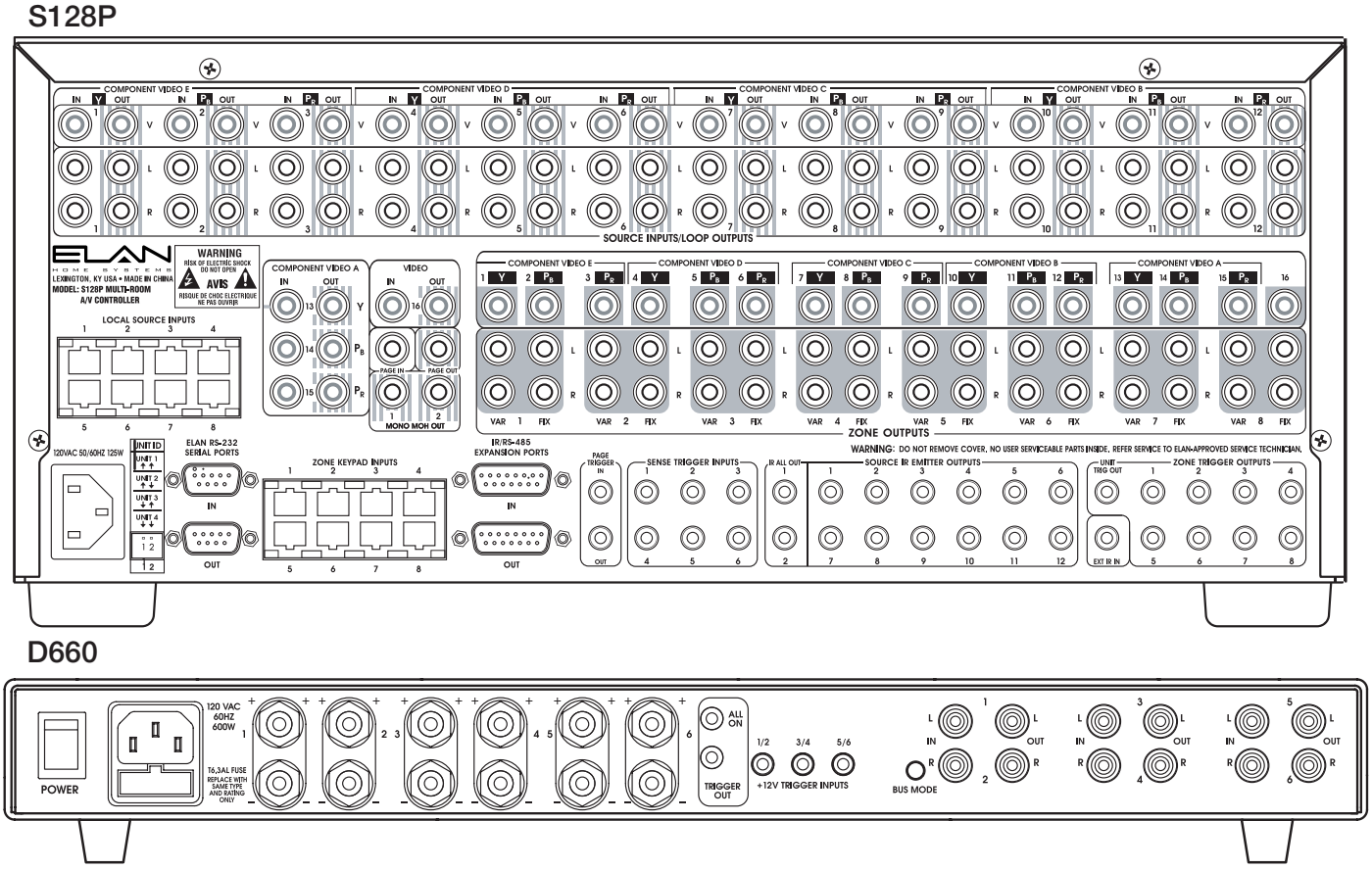


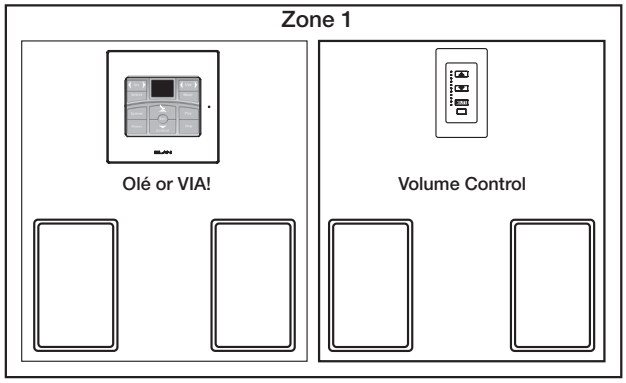
Figure 2-4: Stereo Sub-Zone Fixed Output

© ELAN Home Systems 2009 • All rights reserved.

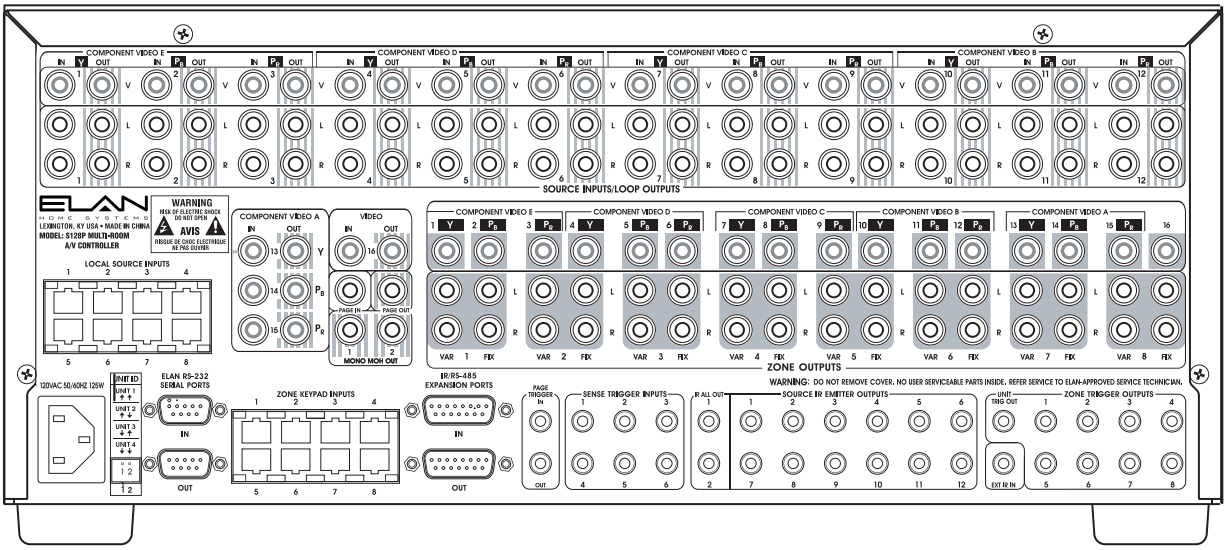
Stereo Zone w/ Stereo Sub-Zone Fixed & Variable Output

This application takes full advantage of the S128P's Fixed and Variable Zone Audio Outputs. The main zone utilizes the Variable outputs. An Olé Touch Pad or VIA! Touch Panel controls source selection, source control, etc. and volume up/down in the main zone.

The sub-zone uses a volume control to ramp volume up/down independently from the main zone, however, it always shares the same source. If using an ELAN electronic volume control in the sub-zone, system and source control is possible using a hand-held remote control. This application uses more amp channels than the previous example, but only uses one volume control in the sub-zone.



S128P


SOURCE INPUTS/LOOP OUTPUTS
ZONE OUTPUTS
LOCAL SOURCE INPUTS
ELAN RS-232 SERIAL PORTS
ZONE KEYPAD INPUTS
IR/RS-485 EXPANSION PORTS
SENSE TRIGGER INPUTS
SOURCE IR EMITTER OUTPUTS
ZONE TRIGGER OUTPUTS
MONO MON OUT
WARNING: DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICE TO ELAN-APPROVED SERVICE TECHNICIAN.

A12

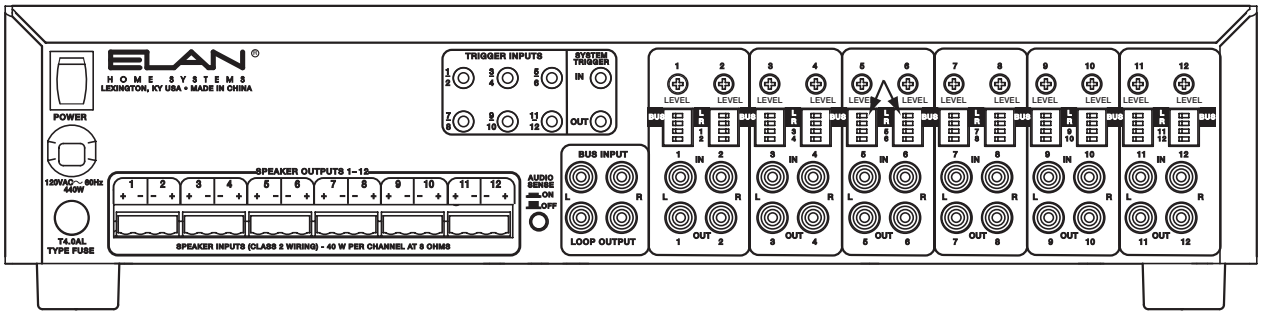


Figure 2-5: Stereo Sub-Zone Fixed & Variable Output

© ELAN Home Systems 2009 • All rights reserved.

Stereo Zone w/Two Stereo Sub-Zones

This application is ideal for large areas where independent volume control is needed. Volume is controlled in a variable zone using touch pads or touch panels. Sources for the entire zone are selected and controlled from this same keypad or touch panel.

Connect the Fixed Zone Audio Outputs to two impedance matching volume controls, then to two pairs of speakers. The volume controls will ramp volume up/down for only the speakers that they are connected to, giving separate volume control in all areas of the zone. If using electronic volume controls, a hand-held IR remote control can be used for source select and control in the sub-zone areas. If using rotary volume controls, all source selection and control must be done from the keypad or touch panel.

This application has cost-saving advantages. Only two pairs of amp channels are needed. If using electronic volume controls, independent volume up/down is available as well as source selection and control. In this application, separate source selection is only available in one area.

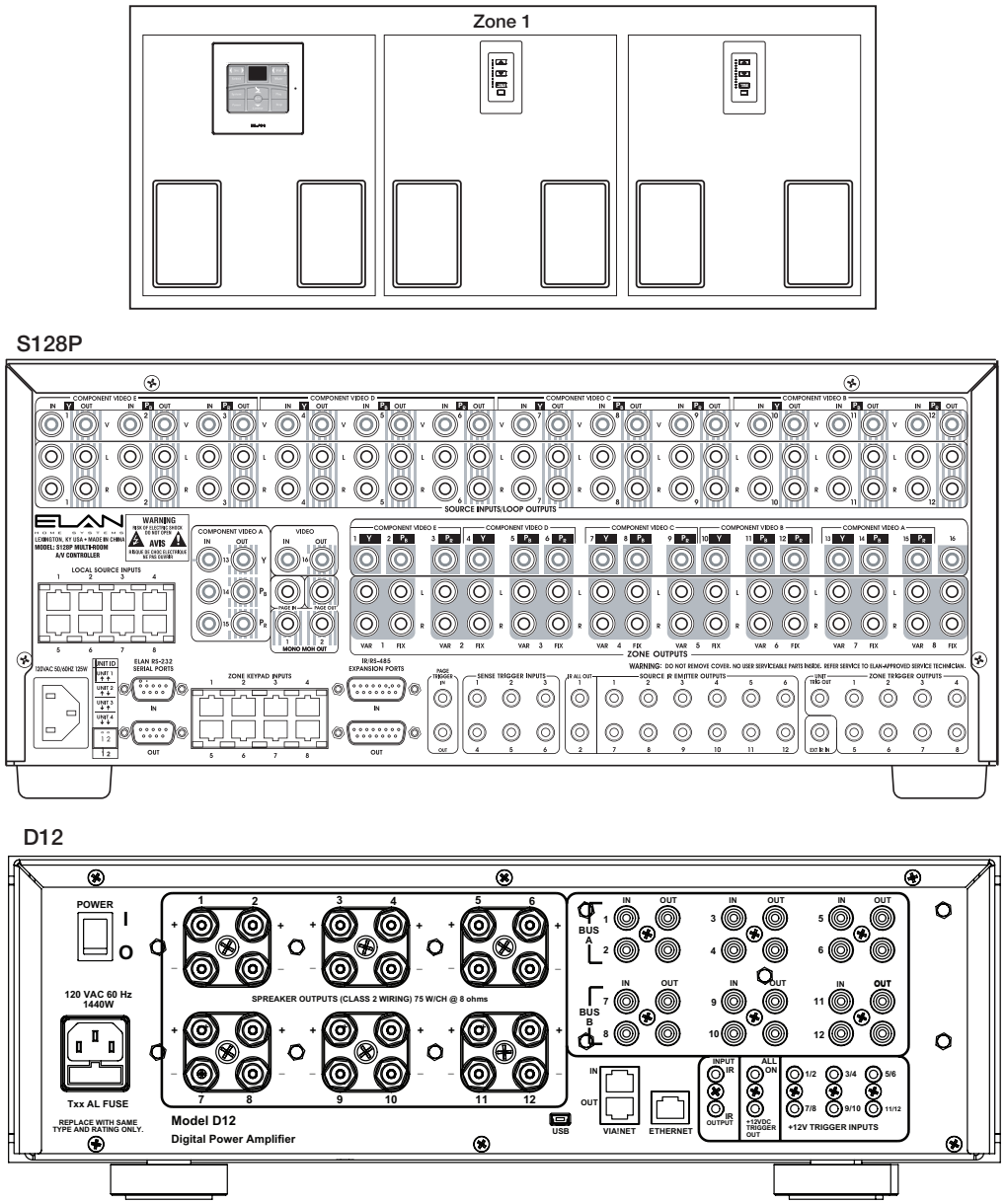
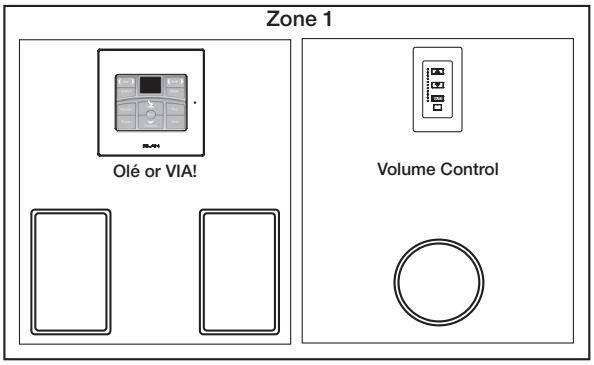


Figure 2-6: Two Stereo Sub-Zones

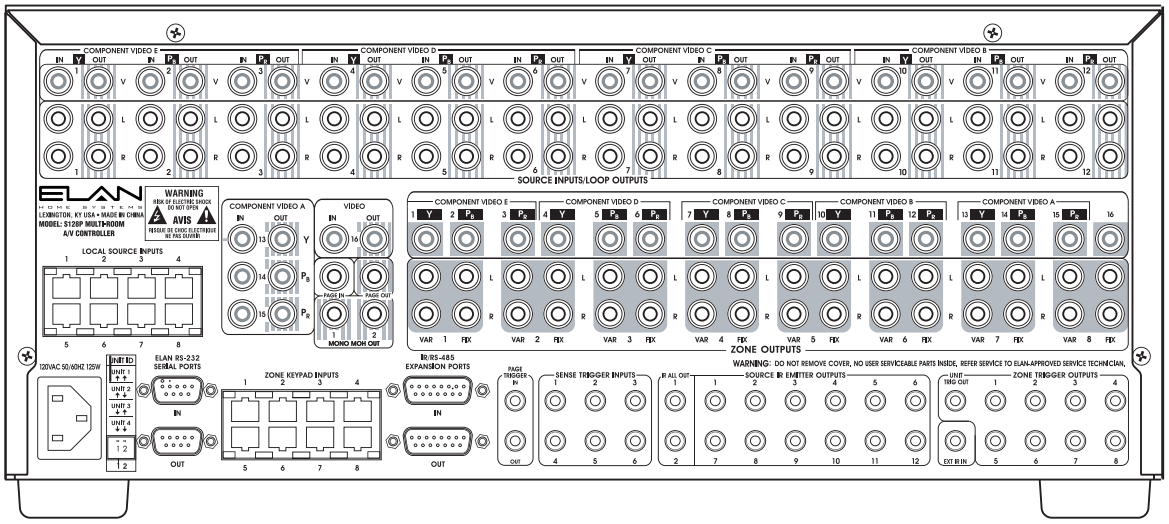
© ELAN Home Systems 2009 • All rights reserved.

Stereo Zone w/ Mono Sub-Zone

Mono speakers are often used in areas that do not have a distinct listening area such as a basement or kitchen. This application provides source selection, source control and volume up/down from a touch pad or touch panel in the main zone, and volume up/down in the sub-zone. If using an electronic volume control in the sub-zone, source select and zone control are available by using a hand-held IR remote control.



S128P



A12

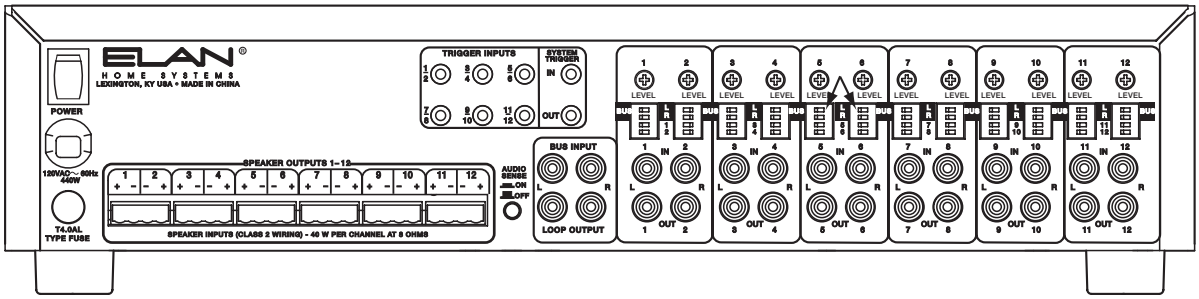


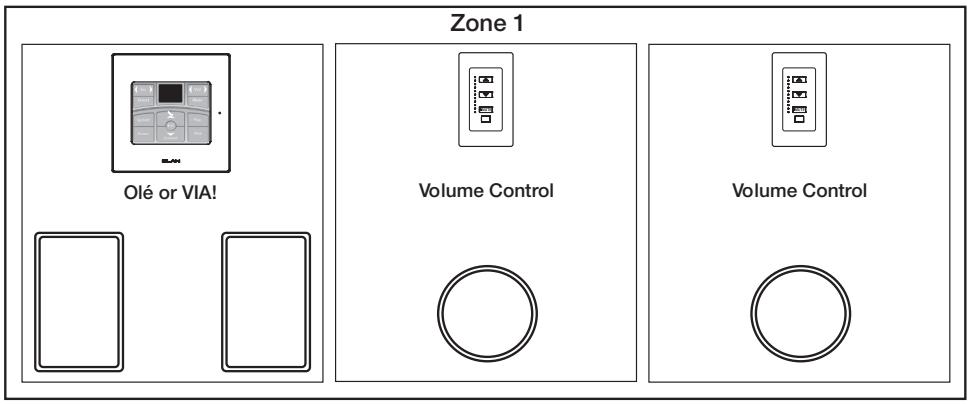
Figure 2-7: Stereo Zone with Mono Sub-Zone

© ELAN Home Systems 2009 • All rights reserved.

Stereo Zone w/Two Mono Sub-Zones

Expanding zones by using mono sub-zones is a great way to save money and amplifier channels. This application uses a total of four amp channels to create three separate areas with independent volume control. As in previous examples, a source can be selected and controlled from the keypad or touch panel in the main zone. Volume up/down in the main zone is controlled the same way. Sub-zone volume is controlled from the individual volume controls in each sub-zone. Sources can be controlled from a hand-held IR remote control if using electronic volume controls in the sub-zone.

Please note that an RCA 'Y' cable must be used from the zone's Fixed Zone Audio Output to an Input 1 L of an ELAN D660. This cable creates a mono signal. Connect the Output 1 L of the same Channel to Input 1 R. Now, the same audio plays out of Speaker Output 1 R and Speaker Output 1 L. A mono volume control is connected to each of these speaker outputs to create two mono sub-zones.



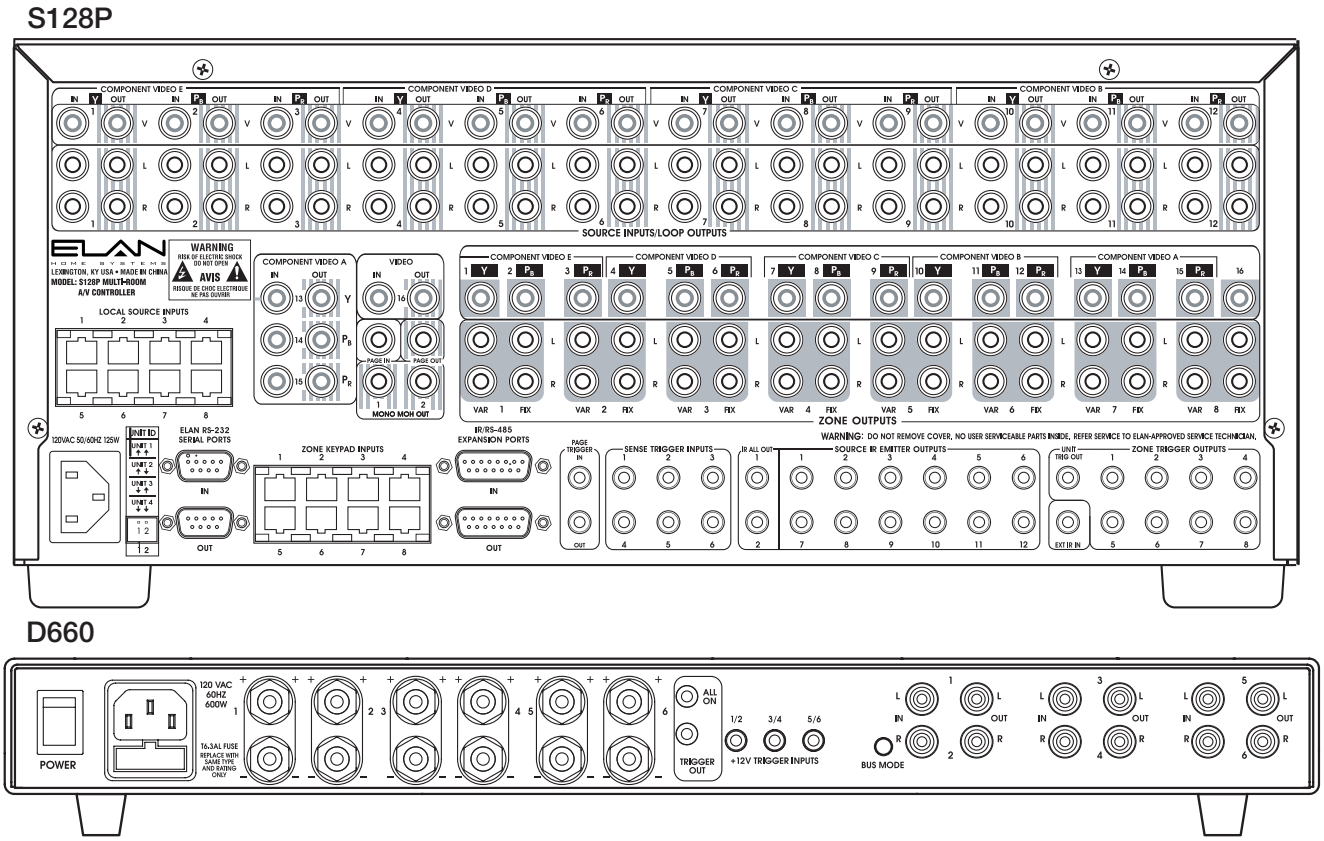


Figure 2-8: Stereo with Two Mono Sub-Zones

© ELAN Home Systems 2009 • All rights reserved.

Chapter 3. Connections

System Control

System control connections are comprised of IR Inputs, IR Emitter Outputs, IR/RS485 Expansion ports, RS232 ports, and Triggers. These various control methods can be combined and integrated to create hundreds of possible control schemes for customized functionality.

SPP Precision Panel

The SPP Precision Panel is more than a convenient trim-out solution for the S128P. With more sources, more zones and more built-in features than any other ELAN multi-room controller to date, the number of wire runs and systems connections needed to get everything up and running smoothly makes the SPP a necessity!

The rear panel of the SPP features a neatly laid out array of all the 110 punch-downs necessary to ensure quick, reliable connection of keypads, touch panels, and touchpads in every zone. There are also dedicated punch-down connectors for six ELAN™Sense sensors, Triggers, and EXT IR signals. The clearly labeled overlays shows both the color-code and function of every connection. There are RJ-45 jacks and a switch on the rear of the panel for an easy link to an additional SPP, and SS1 System Station.

Use one or two meter RJ-45-to-RJ-45 interconnect cables for reliable connections. Six Sense Input jacks use stereo 3.5mm interconnect cables to go directly to the Sense Inputs on the S128P. The front panel also features DC power jacks for 1.5A, 4A and 10A VIA! power supplies .

The front panel of the SPP is removable, to facilitate easy access when connecting wires. New-construction brackets are available, or the SPP can easily be retro-fitted using the four clamping legs attached to the frame, which secure the panel securely to drywall. Additional panels are required for systems with two, three or four S128P Controllers (one SPP per chassis).

Front **Rear**

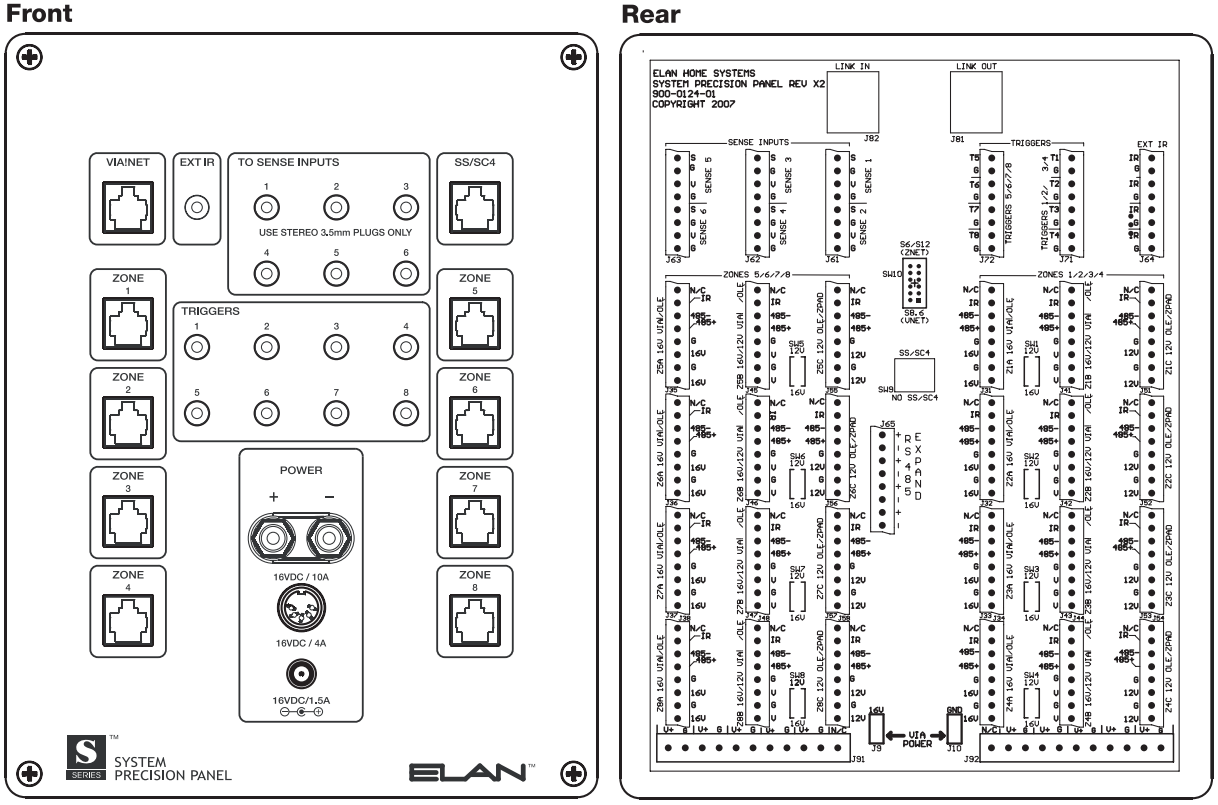


Figure 3-1: SPP Precision Panel

© ELAN Home Systems 2009 • All rights reserved.

Connections When Using an ELAN SPP System Precision Panel - Rear

NOTE: Prior to making any connections on the SPP, place the appropriate overlay on the rear of the Precision Panel for the system type that is being installed.

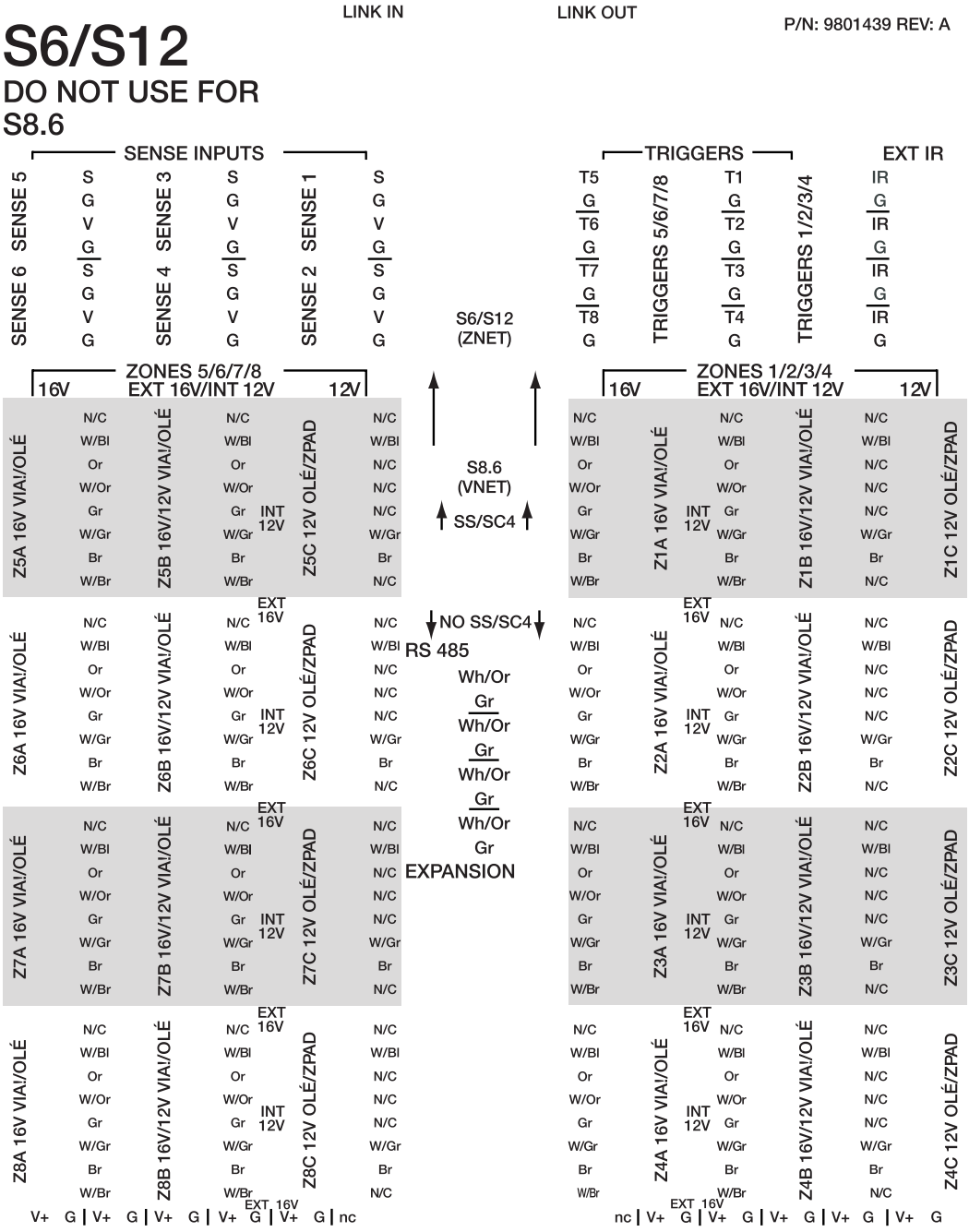


Figure 3-2: SPP "S6 / S12" Overlay

NOTE: On the SPP, the "A" and "B" punchdown locations for RS 485 are always V-Net 485, NOT Z-Net. Connect any Z-Net 485 to the RS 485 expansion block of the SPP Precision Panel to obtain proper feedback.

© ELAN Home Systems 2009 • All rights reserved.

VIA! Touch Panel Connections

The S128P is designed to work flawlessly with ELAN VIA! Touch Panels. VIA! Touch Panels require ELAN 16 Volt DC power supplies. Use the PWR10 16V/10A power supply to power up to ten VIA! Touch Panels. Use the PWR4 16V/4A power supply to power up to 4 VIA! Touch Panels. Use the PWR1 16V/1.5A power supply to power a single touch panel.

When using a VIA! Valet 100EM Tabletop/Under-Cabinet Color Touch Panel, a PVIA1 Valet Wall Plate must be used. One PVIA Wall Plate is included with each VIA! Valet. The installer has the option of using the included PVIA1 power supply, or one of the other 16V power supplies to provide power to the Valet.

VIA! Touch Panels punch-down to the rear of the SPP at two locations, depending on system configuration. These locations are labelled “ZXA 16V VIA!/OLÉ” and “ZXB 16V/12V VIA!/OLÉ” where “X” corresponds to the zone that the touch panel(s) will control. Two touch panels can connect to each punch-down location for each zone. If using more than 2 touch panels per location, make connections off of the SPP and use jumper wires to punch-down to the correct location. Figure 3-4 shows the correct wiring for one touch panel in Zone 1 connected to the “A” location and utilizing 16VDC power from the PWR1, PWR4, or PWR10 power supply connected to the front of the SPP.

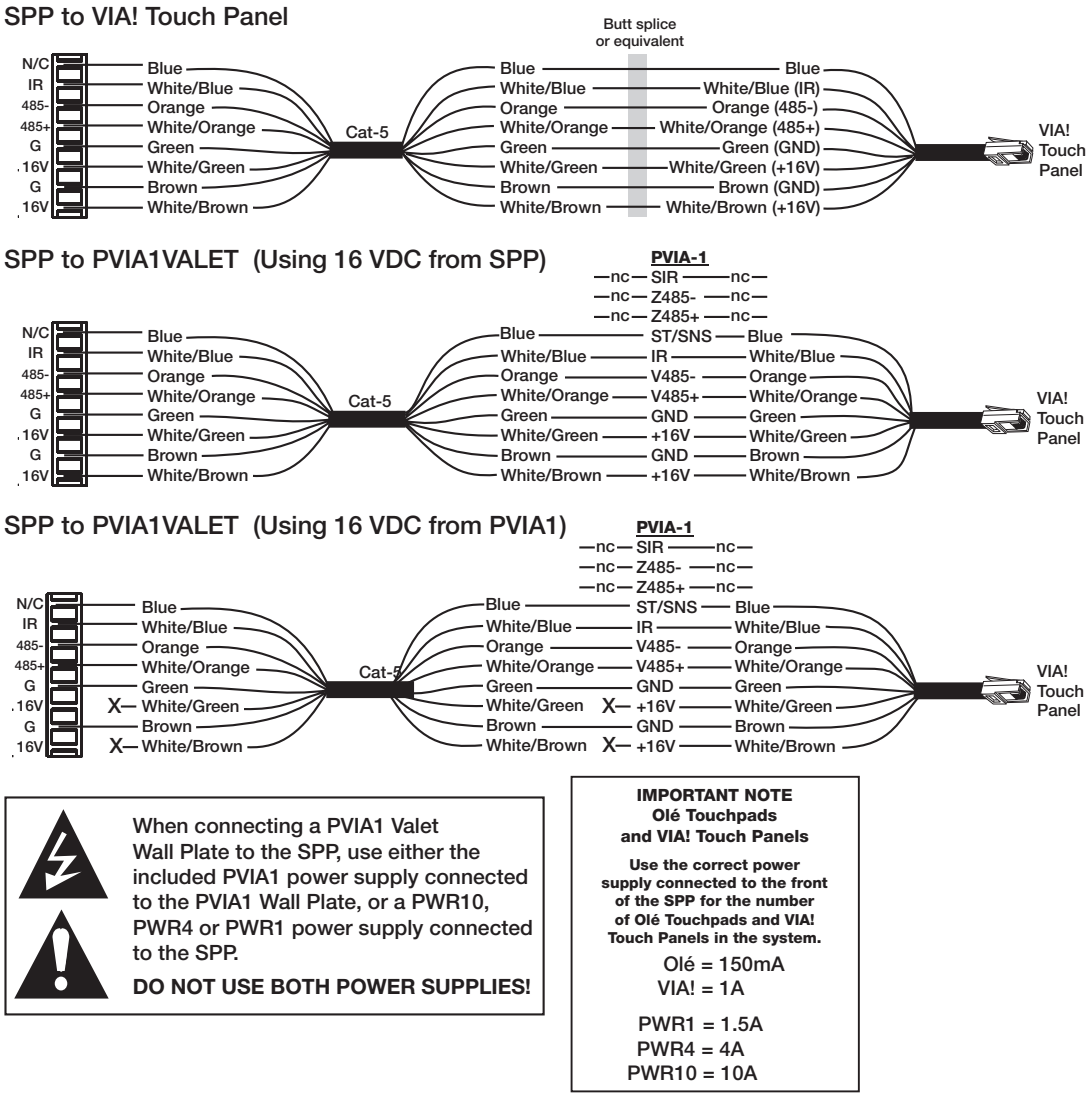


Figure 3-3: VIA! Touch Panel Connections

© ELAN Home Systems 2009 • All rights reserved.

Figure 3-4 shows VIA! Touch Panel connections when the "B" punch-down location is used.

NOTE: Place the "INT 12V/EXT 16V" switch in the DOWN ("EXT 16V") position for this application. This allows the external 16VDC power from the PWR1, PWR4, or PWR10 power supply connected to the front of the SPP to reach the touch panel(s).

NOTE: Refer to Figure 3-3 for VIA! Valet100EM connectivity. The "INT 12V/EXT 16V" switch will be in the "EXT 16V" position as shown in Figure 3-3.

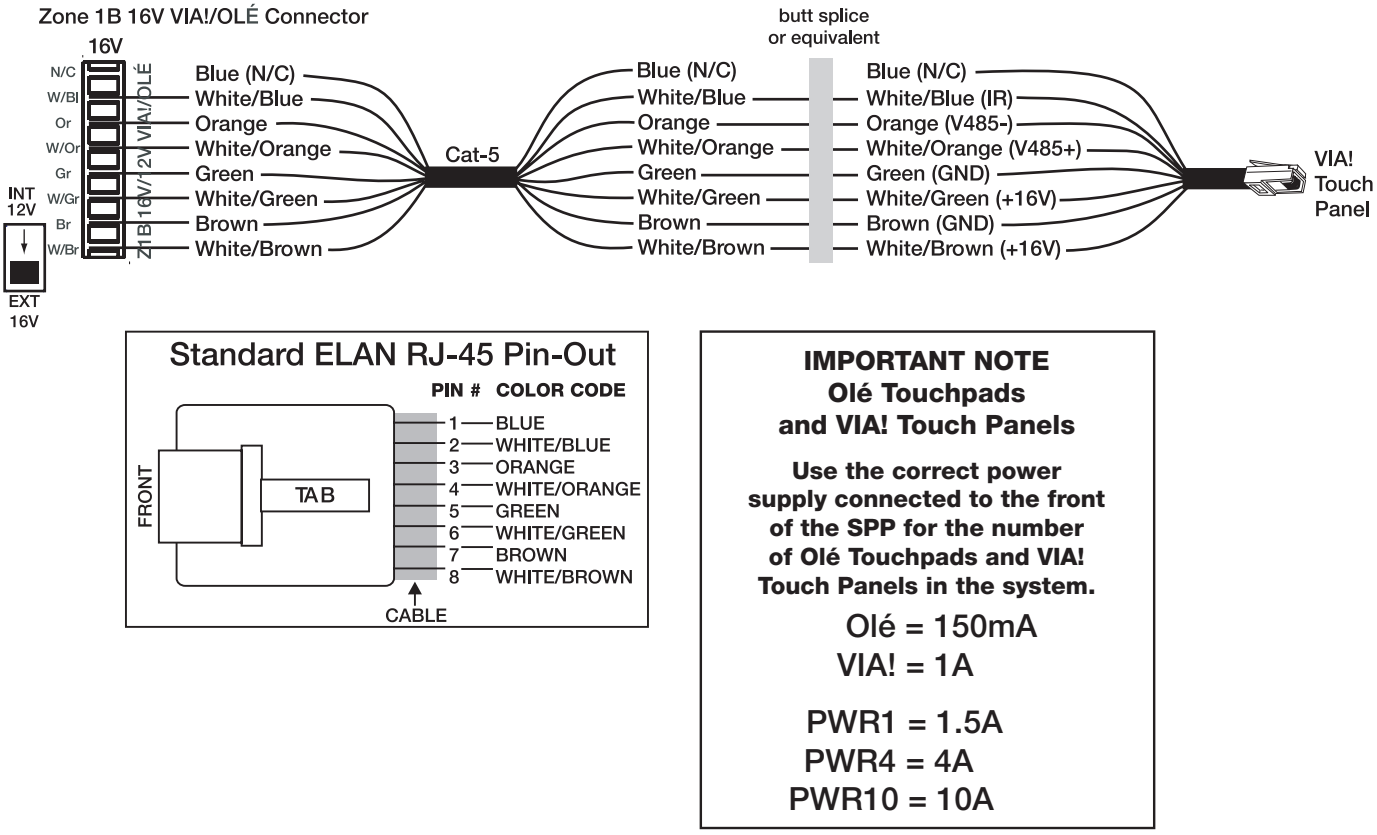
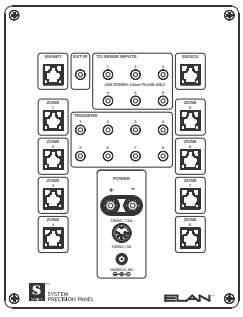


Figure 3-4: VIA! Touch Panel Connections



ELAN Precision Panels save time and make sense out of complex wiring jobs!

© ELAN Home Systems 2009 • All rights reserved.

Olé Film Interactive Touchpads

Olé Film Interactive Touchpads punch-down to the rear of the SPP at three locations, depending on system configuration. These locations are labelled “ZXA 16V VIA!/OLÉ”, “ZXB 16V/12V VIA!/OLÉ” and “ZXC 12V OLÉ/ZPAD” where “X” corresponds to the zone that the touchpad(s) will control. Touchpads can connect to each punch-down location for each zone. If using more than 2 touchpads per location, make connections off of the SPP and use jumper wires to punch-down to the correct location.

“A” Punchdown Locations

Figure 3-5 shows connectivity to the “A” location and utilizing 16VDC power from a PWR1, PWR4, or PWR10 16VDC power supply connected to the front of the SPP.

NOTE: The “A” punchdown location is always connected to the external 16VDC power from a PWR1, PWR4, or PWR10 16VDC power supply connected to the front of the SPP.

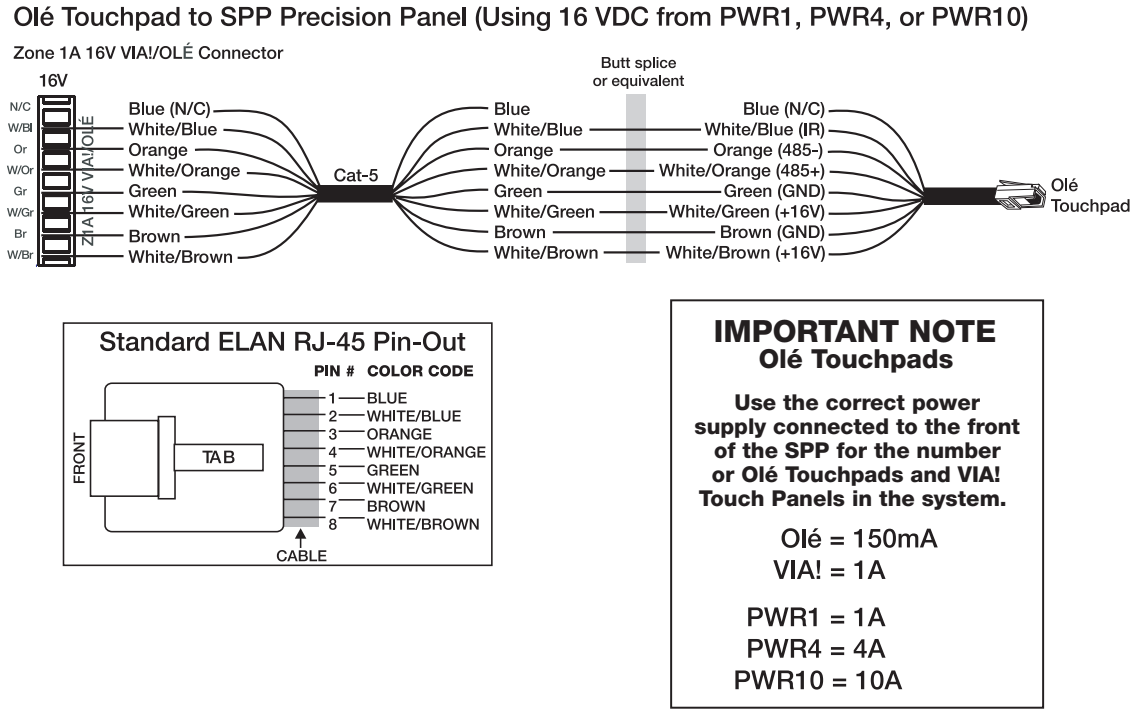


Figure 3-5: Olé Touchpad “A” External 16VDC Connections

© ELAN Home Systems 2009 • All rights reserved.

"B" Punchdown Locations-16V

Figure 3-6 shows connectivity to the "B" location and utilizing 16VDC power from a PWR1, PWR4, or PWR10 16VDC power supply connected to the front of the SPP.

NOTE: Place the "INT 12V/EXT 16V" switch in the DOWN ("EXT 16V") position for this application.

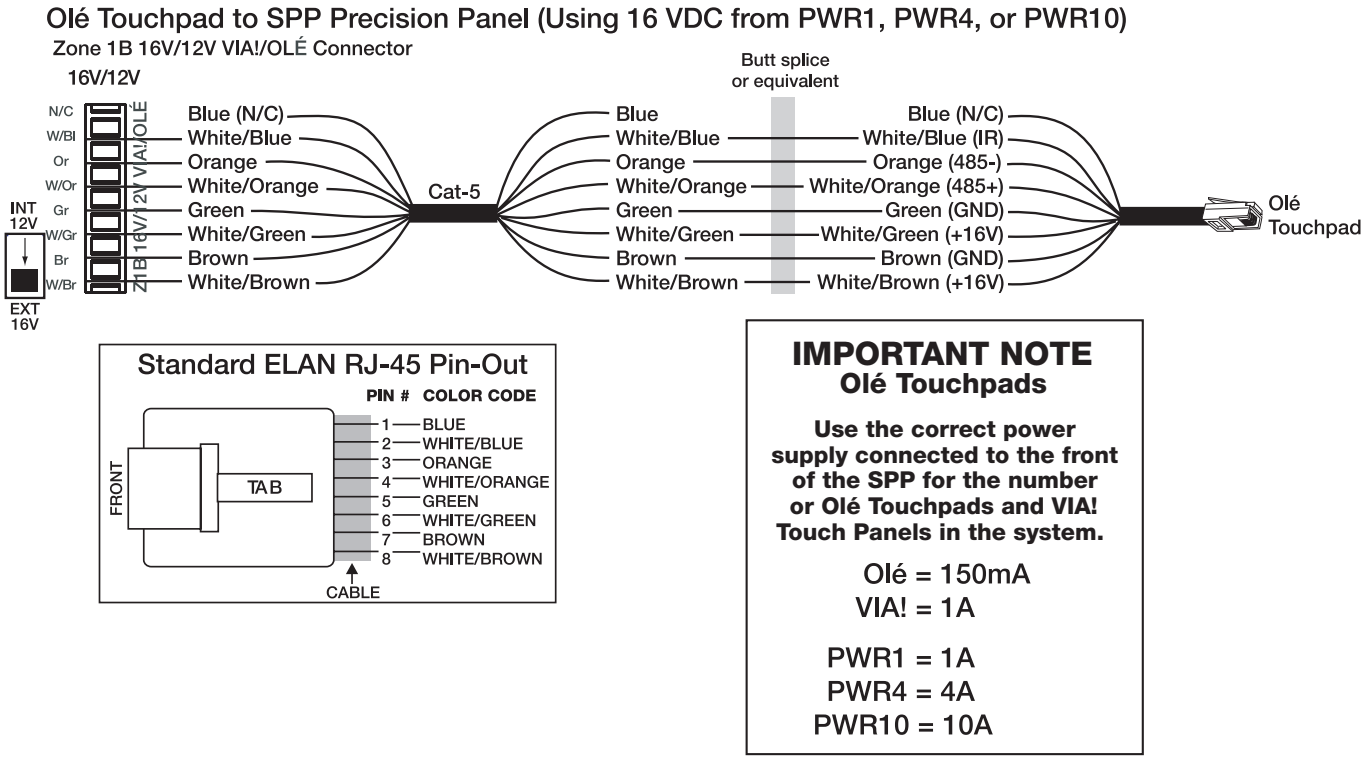


Figure 3-6: Olé Touchpad "B" External 16VDC Connections

© ELAN Home Systems 2009 • All rights reserved.

"B" Punchdown Locations-12V

The SPP Precision panel has the ability to connect touchpanels, keypads and Olé Touchpads in various combinations in each zone. The "B" punchdown location can either pass 12VDC power from the S128P Controller (Internal Power) or 16VDC from a power supply connected to the front of the SPP (External). ***Figure 3-7*** shows connectivity to the "B" location and utilizing internal 12VDC power from the S128P Multi-Room Controller.

NOTE: Place the "INT 12V/EXT 16V" switch in the UP ("INT 12V") position for this application.

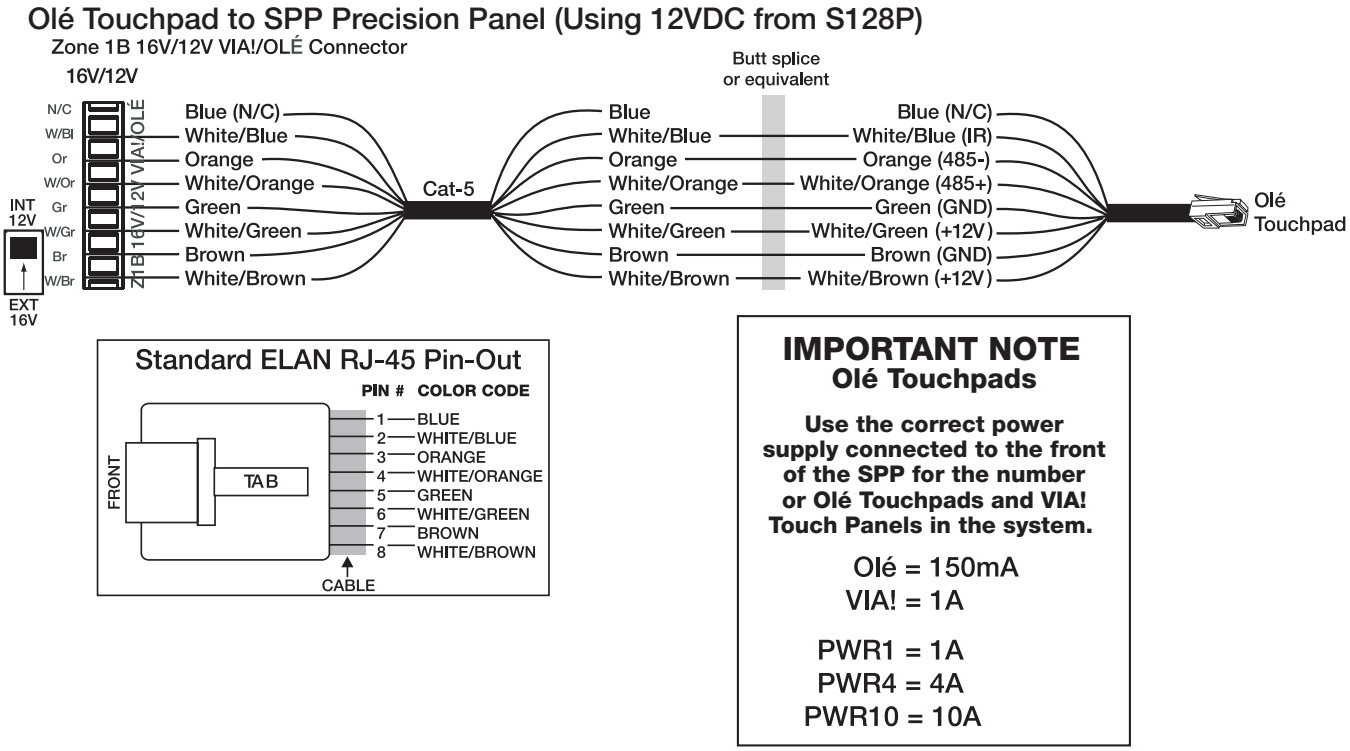
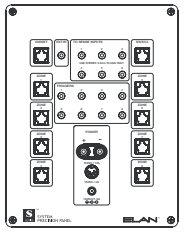


Figure 3-7: Olé Touchpad "B" Internal 12VDC Connections



ELAN Precision Panels save time and make sense out of complex wiring jobs!

© ELAN Home Systems 2009 • All rights reserved.

"C" Punchdown Locations

Figure 3-8 shows connectivity to the "C" location and utilizing internal 12VDC power from the S128P Multi-Room Controller.

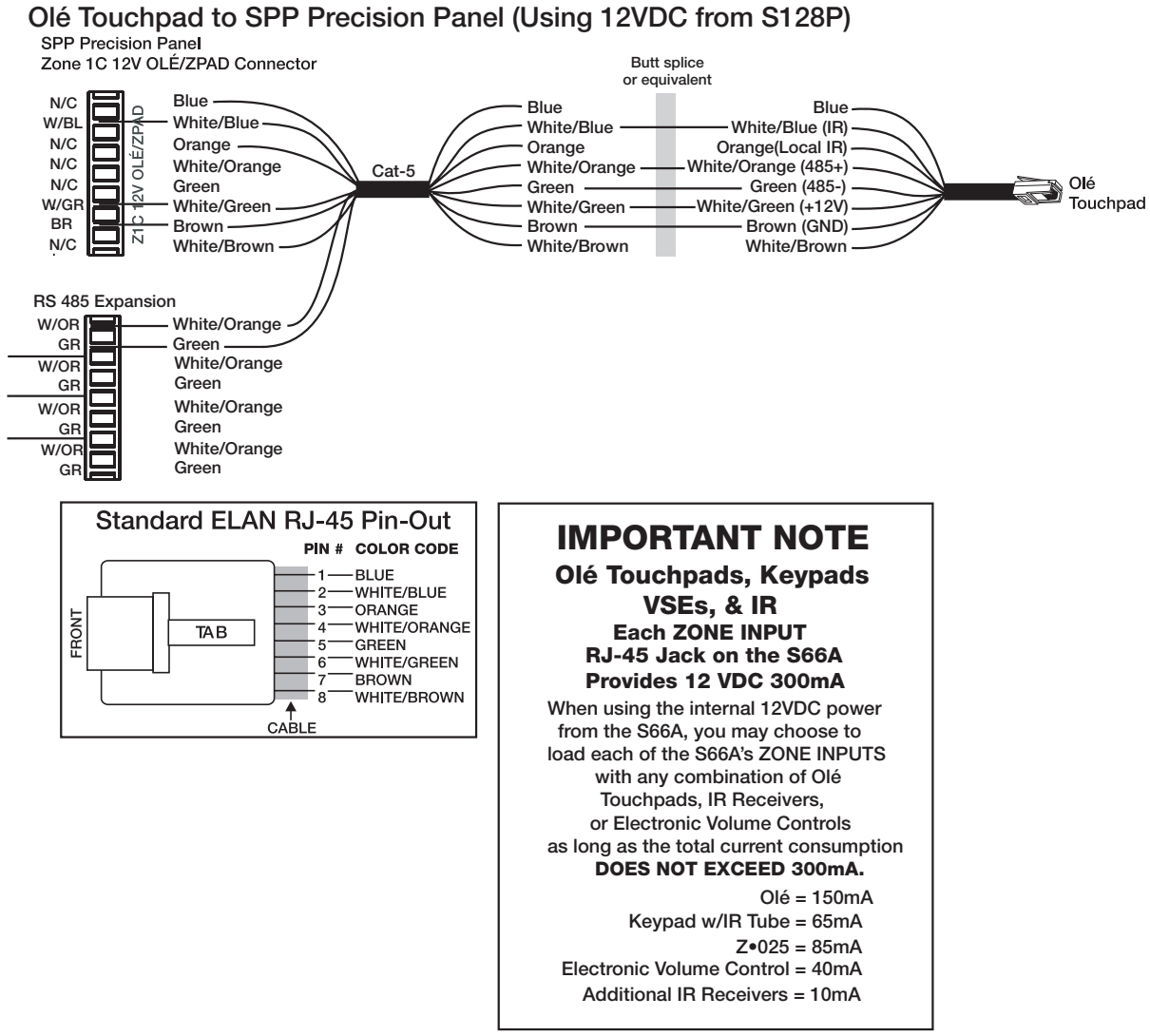


Figure 3-8: Olé Touchpad "C" Internal 12VDC Connections

Z•Pad Connections

"C" Punchdown Locations

Figure 3-9 shows there are two methods available when connecting keypads as zone controllers in an S128P based system. If using more than 2 keypads per location, make connections off of the SPP and use jumper wires to punch-down to the correct location.

Method A-VNET (Using an SS1/SC-1)

Punch the 485+ (Wh/Orange) and 485- (Green) wires down to the RS 485 Expansion block located below the SS/SC4 switch as shown on the S6/S12 Overlay.

Method B-ZNET (No SS1/SC-1)

Remove the S6/S12 Overlay. Punch the 485+ (Wh/Orange) to the 485+ location on the SPP and punch the 485- (Green) wire to the 485- location on the SPP as shown below.

© ELAN Home Systems 2009 • All rights reserved.

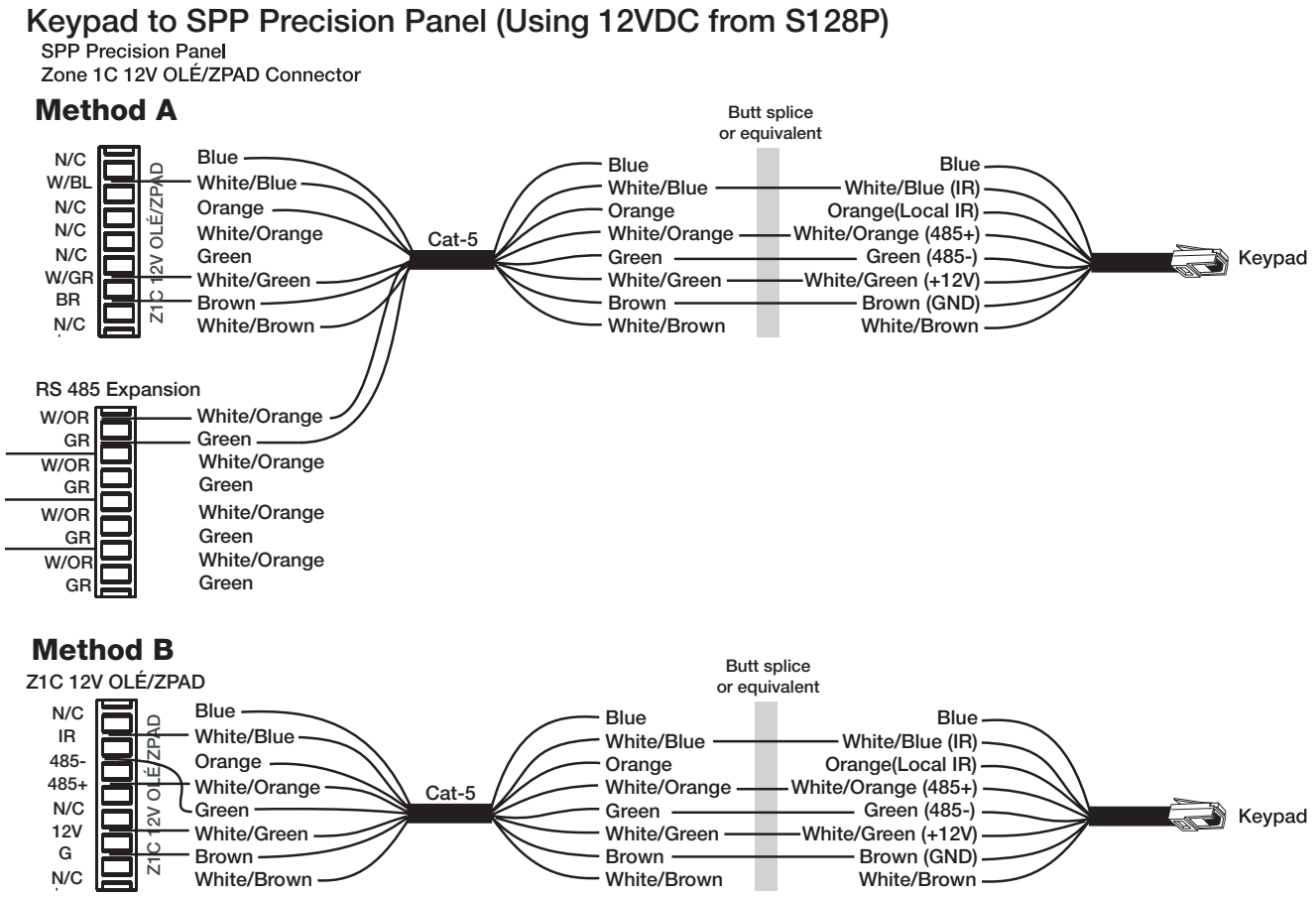


Figure 3-9: Z•Pad Connections

IR Receiver Connections

Stand-alone IR receivers for use with hand-held remotes can easily connect to the SPP “C" punchdown locations. Connect +12V, IR, and GND to the specific zone that is to be controlled.

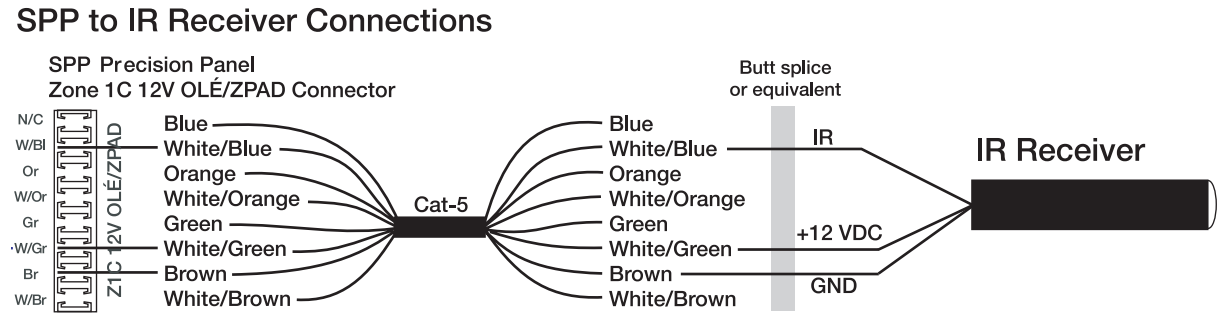


Figure 3-10: IR Receiver Connections

© ELAN Home Systems 2009 • All rights reserved.

Sense Input Connections

The Sense Trigger Inputs of the S128P are primarily for use with VIA! Touch Panels and Olé Touchpads. An ELAN™SENSE Sensor can be connected that will cause VIA! Touch Panels and Olé Touchpads to execute IR or serial commands. Use VIA!TOOLS or ELANTOOLS setup software to program Trigger Input functionality. Wiring the Sense Inputs consists of punching down Voltage (V), Sense (S), and Ground (G) as shown in ***Figure 3-11***.

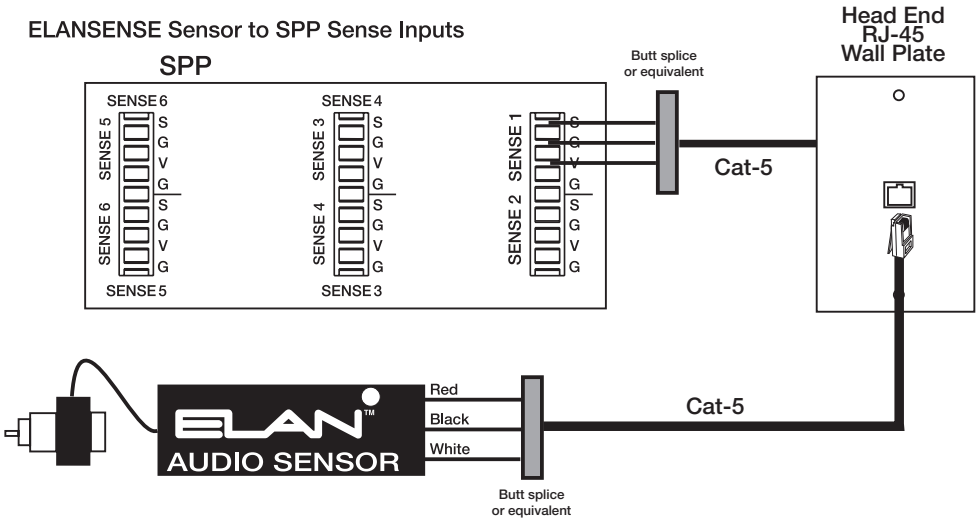


Figure 3-11: Sense Input to SPP Connections

ELAN™SENSE Sensors provide for a multitude of automation requirements:

- Audio Sensor: Detects line-level audio utilizing an RCA adaptor.
- Video Sensor: Detects Composite video utilizing an RCA adaptor.
- Light/LED Sensor: Detects ambient light or multi-color LEDs.
- Contact Closure Sensor: Detects closed-contact ON/OFF status.
- Current/Magnetic Sensor: Detects electrical current through power cords or magnetic flyback.
- Voltage Sensor: Detects 3-24 Volts AC or DC. Doorbell Sensor: Detects multiple doorbell signals for advanced switching functionality.

Programmable Trigger Connections

Devices that are remotely located can utilize the SPP's Triggers Connections in order to receive signals based on zone activation or system activation. The Programmable Trigger outputs can be controlled using IR or Serial Commands. Examples include remotely located amplifiers and/or power controllers.

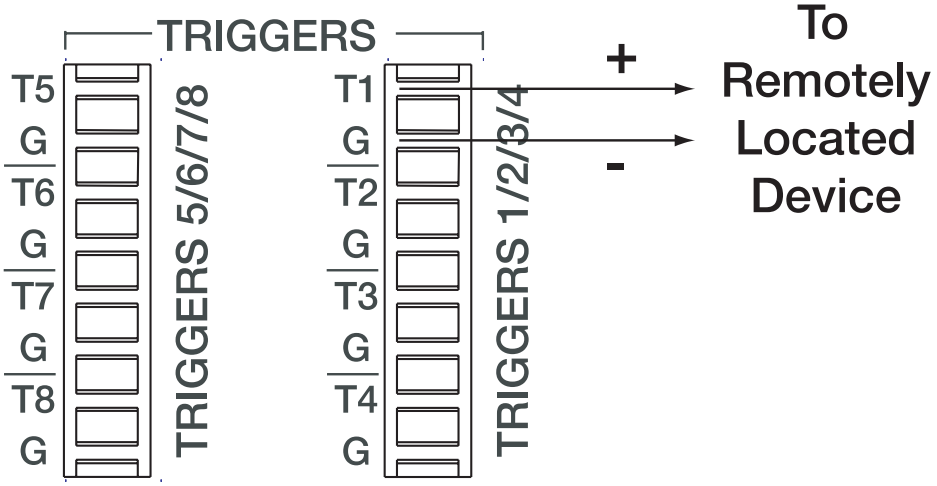


Figure 3-12: Programmable Trigger Connections

© ELAN Home Systems 2009 • All rights reserved.

LINK IN/LINK OUT Connections

Use the LINK IN and LINK OUT RJ-45 connectors to link multiple S128P chassis and multiple SPP Precision Panels. Use an RJ-45 to RJ-45 Interconnect cable from the LINK IN jack of the first SPP Panel to the LINK IN jack of the second SPP Panel and so on.

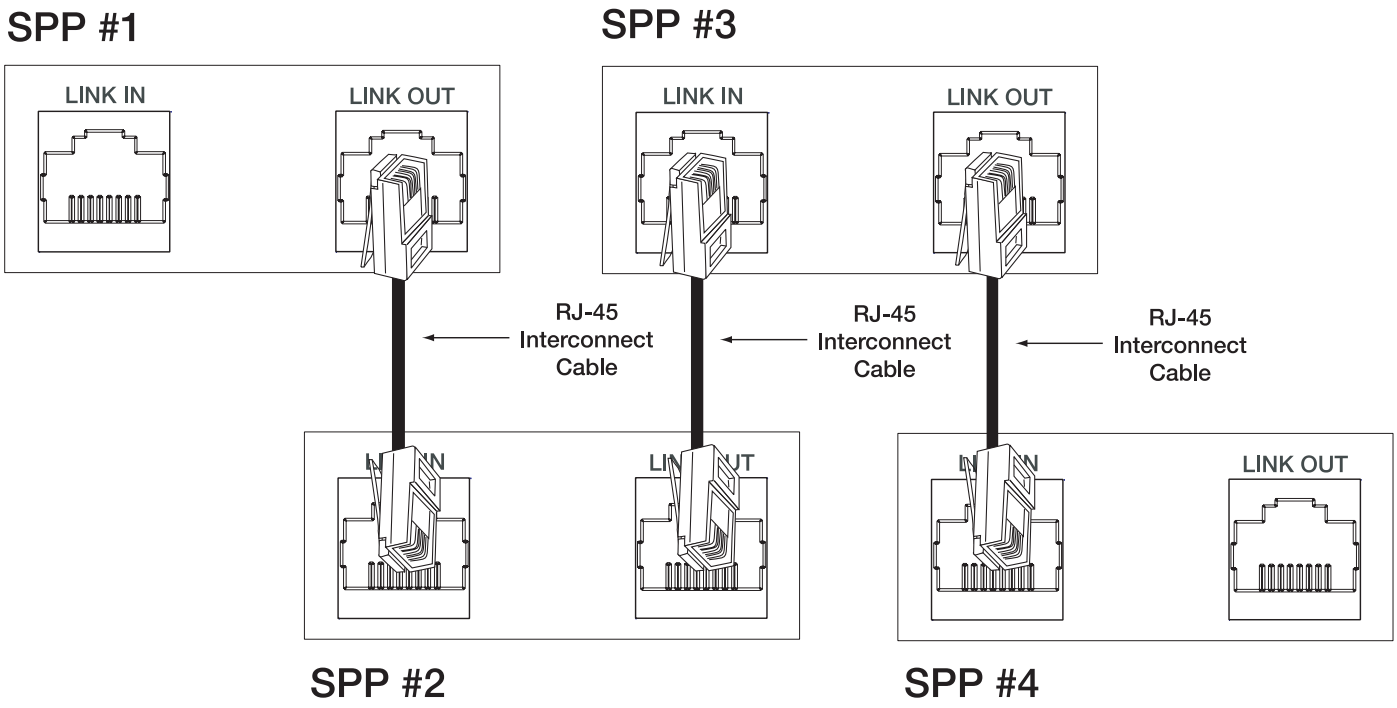


Figure 3-13: Link In/Link Out Connections

© ELAN Home Systems 2009 • All rights reserved.

External Power Connections

Use the V+ and G screw terminal connections at the bottom edge of the SPP Precision Panel to connect 2 conductor wires (14-18AWG) to power VIA! Touch Panels that DO NOT use the Cat-5 power wiring option at the touch panel and DO use the external power connector located on the touch panel. This application is typically used for long wire runs greater than 110 feet in length. It is not necessary to use both the Cat-5 power connection (located on the ZONE punchdown locations) and the External Power connectors described here.

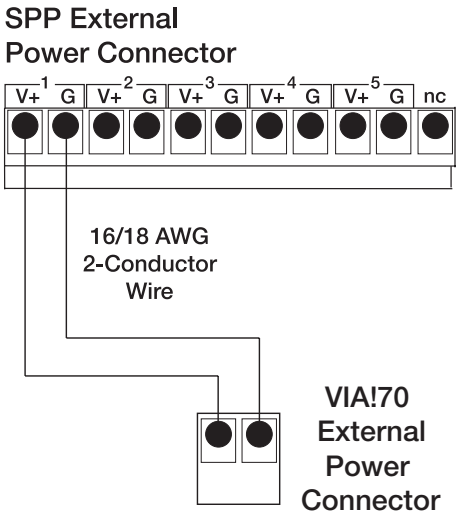


Figure 3-14: External Power Connections

RS-485 Expansion Connections

The RS-485 EXPANSION punchdown connectors channel RS-485 signals (ZNET) generated by the multi-room controller. The RS-485 information sent to these punchdowns is identical to that sent to the ZONE locations (Z#C). The RS-485 EXPANSION locations simply allow additional punchdown positions and typically WILL BE needed when installing touch panels, touchpads, and keypads in an S128P system.

NOTE: The S128P Controller, generates ZNET information for status feedback. Make sure to set the ZNET/VNET switch to the ZNET position in any S128P-based system.

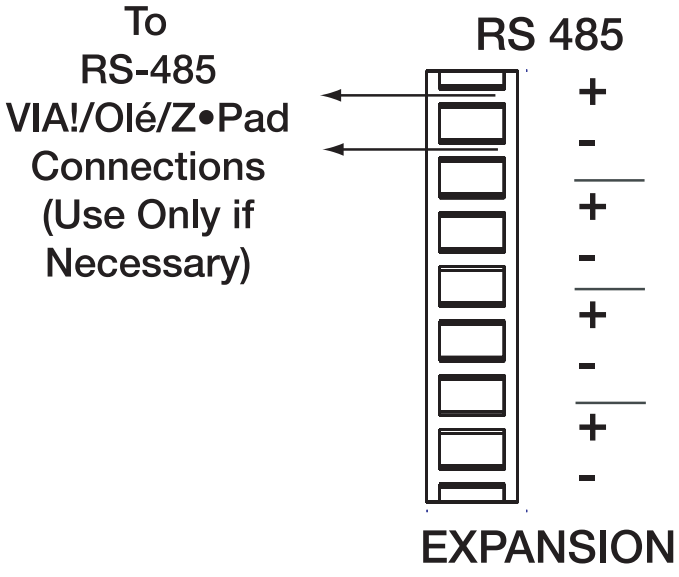


Figure 3-15: RS-485 Expansion Connections

© ELAN Home Systems 2009 • All rights reserved.

Switches

There are three types of switches located on the rear of the SPP Precision panel: The INT 12V-EXT 16V switches (one per zone), the ZNET/VNET switch and the SS/SC4-NO SS/SC-4 switch. These switches affect the function of the S128P Multi-Room Controller in various ways depending upon system configuration.

INT 12V-EXT 16V Switch

As previously described, the INT 12V-EXT 16V switch selects between internally generated voltage from the S128P Controller (+12 Volts DC) for use with Z•Pad Keypads and Olé Touchpads, or externally generated voltage from a power supply connected to the front of the SPP Precision Panel to be utilized by Olé Touchpads and VIA! Touch Panels. This selection applies only to the "Z#B 16V/12V OLÉ/ZPAD" punchdown location. Select INT 12V (UP) when 12VDC is required for keypads or touchpads. Selects EXT 16V (DOWN) when using an external 16VDC power supply for touch panels or touchpads.

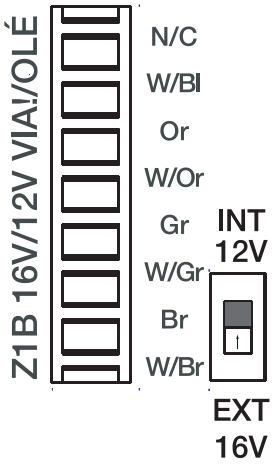


Figure 3-16: Internal/External Voltage Switch

ZNET/VNET Switch

The ZNET-VNET switch selects between systems based on ELAN's ZNET (S66A and S128P Multi-Room Controllers) and VNET (S86A/P). This switch will always be in the ZNET position when installing the SPP with the S128P Controller.

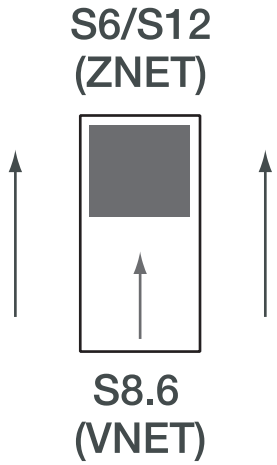


Figure 3-17: ZNET/VNET Switch

© ELAN Home Systems 2009 • All rights reserved.

SS/SC4-NO SS/SC4 Switch

If the system contains an SS1 System Station or SC-1 Serial Controller, set this switch to the SS/SC4* position. If the system does not contain an SS1 System Station or SC-1 Serial Controller, set the switch to the NO SS/SC4 position.

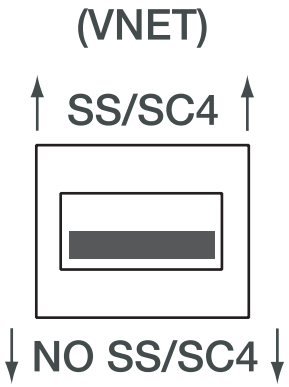
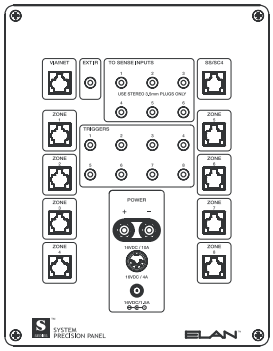


Figure 3-18: SS/SC4-No SS/SC4 Switch

***Note: The ELAN SC-4 is a discontinued product.**



ELAN
Precision Panels
save time
and make sense
out of complex
wiring jobs!

© ELAN Home Systems 2009 • All rights reserved.

Connections When Using an ELAN SPP System Precision Panel - Front

VIA!NET Connection

This RJ-45 connector is used for configuring multiple SS1 configurations. See the VIA!TOOLS or ELANTOOLS Help file for additionl information about configuring multiple SS1's.

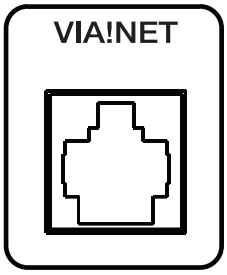


Figure 3-19: VIA!NET Connection (Future Use)

EXT IR Connections

The External IR Input is a powerful feature that can enable specialized functionality in situations where system-wide (not zone-specific) IR control is required. Connect a 3.5mm mono interconnect cable between EXT IR of the SPP and EXT IR IN of the S128P.

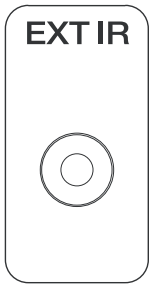


Figure 3-20: EXT IR Connection (Not Used)

Sense Input Connections

Information from ELAN™SENSE Sensors connected to the S128P's ELAN SENSE INPUTS is used to trigger events that have been programmed into VIA! Touch Panels. Typically, sensors will connect to the back of the SPP Precision Panel, then 3.5mm stereo interconnect cables will be used between the Precision Panel's TO SENSE INPUTS jacks and the S128P Controller's ELAN SENSE INPUTS jacks. Utilize VIA!TOOLS or ELANTOOLS Setup Software to create IR or serial command strings for automated functions. See the VIA!TOOLS or ELANTOOLS Help file for additional information about programming Sense Inputs.

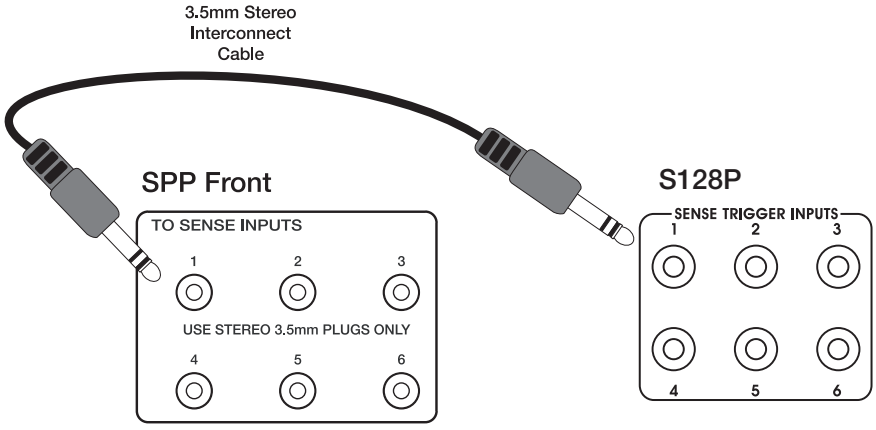


Figure 3-21: Sense Input Connections

© ELAN Home Systems 2009 • All rights reserved.

SS/SC4 Connection

Use the SS/SC4 RJ-45 connector to integrate an ELAN SS1 System Station or SC-4 System Controller to the S128P Multi-Room Controller in order to facilitate integration of RS-232 controlled systems such as security, lighting or HVAC. Use an RJ-45 Interconnect Cable for this purpose.

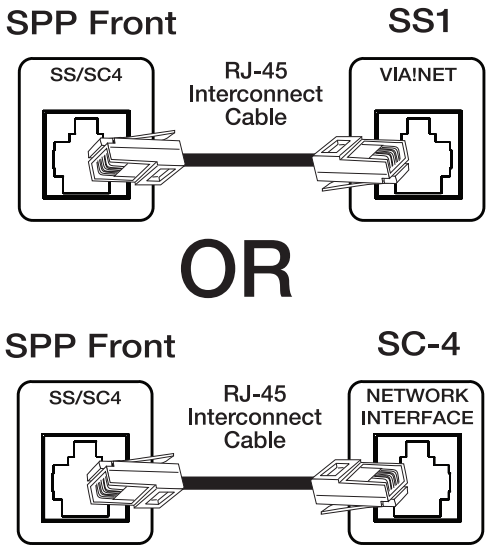


Figure 3-22: SS/SC4

ZONE 1-8 Connections

Connect a straight-through RJ-45 interconnect cable (RJ-45 1 or 2 meter Interconnect Cable) between the S128P's 1-8 Zone Inputs and the SPP Zone 1-8 RJ-45 jacks. This routes all keypads, touch panels, touchpads and IR receivers punched-down on the back of the SPP directly to the S128P.

NOTE: In order to facilitate RS-485 communication, Zone 1 must ALWAYS be connected between the S128P Controller and the SPP Precision Panel.

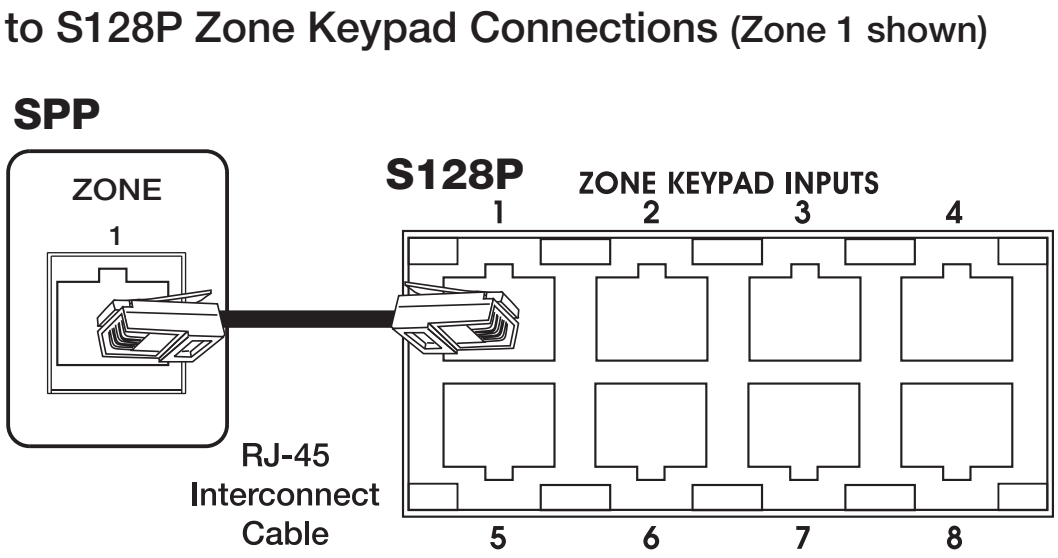


Figure 3-23: Zone Keypad Input Connections

© ELAN Home Systems 2009 • All rights reserved.

Triggers Connections

There are 8 mono 3.5mm Triggers connections on the front of the SPP Precision Panel. After punching down trigger connections on the back of the SPP, use a 3.5mm mono 'mini-to-mini' interconnect cable to connect to the S128P Trigger Outputs as shown below.

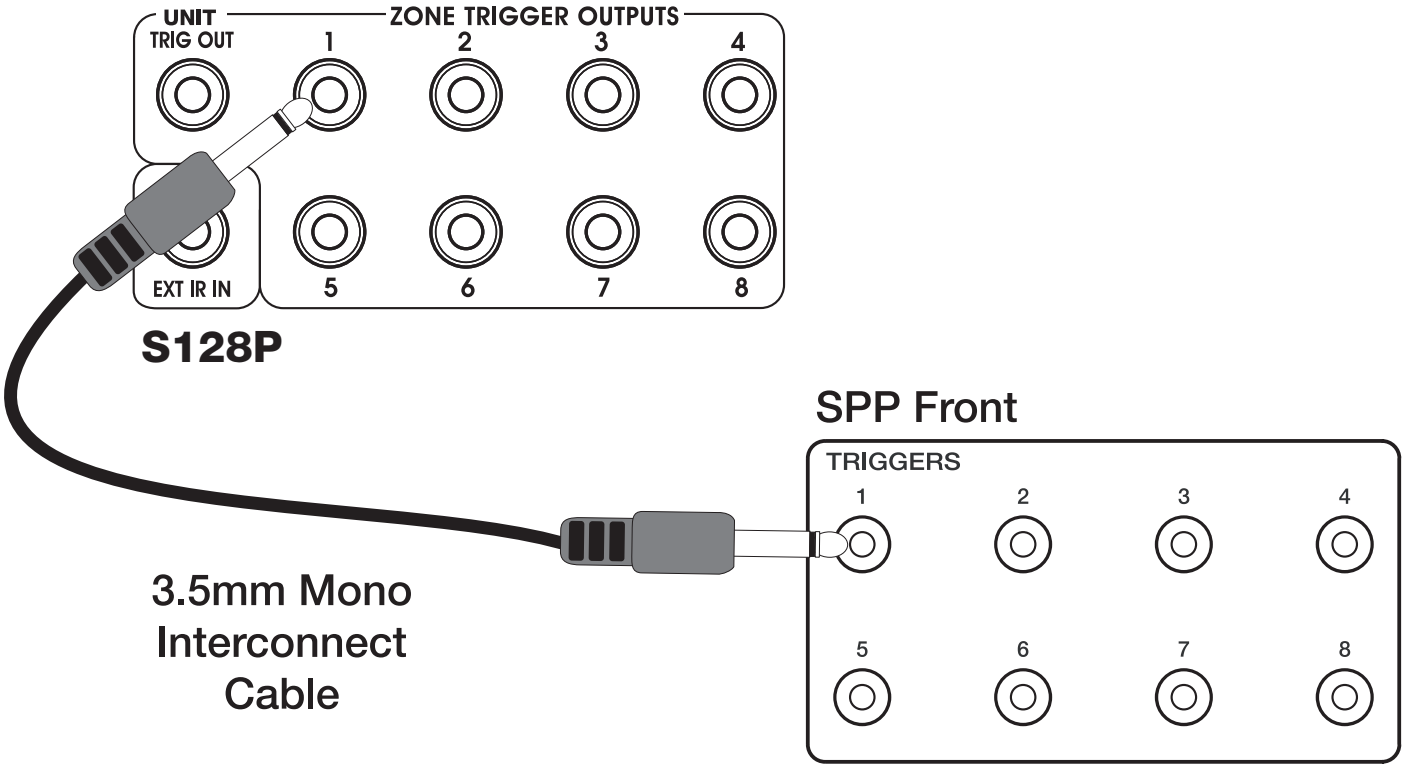


Figure 3-24: Triggers Connection

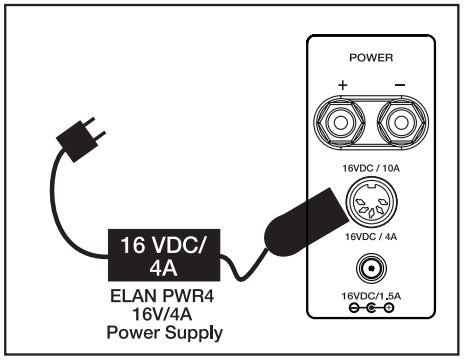
© ELAN Home Systems 2009 • All rights reserved.

Power Connections

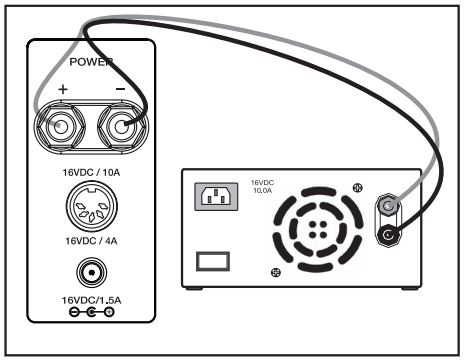
It is possible to connect and power up to ten VIA! Touch Panels using the SPP and a 16VDC power supply. Use punchdown locations “A” and “B” and place the INT V-EXT V switch in the EXT position for each zone that utilizes 16VDC from the connected power supply. Use an ELAN PWR1 16VDC/1.5A power supply for one VIA! Touch Panels. Use an ELAN PWR4 16VDC/4A power supply for up to four VIA! Touch Panels. Use an ELAN PWR10 16VDC/10A power supply for five-to-ten VIA! Touch Panels. It is also possible to connect up to 66 Olé Touchpads using the same 16VDC power supplies. A PVIA1 will power up to 6 Olé Touchpads, a PVIA4 can power up to 26 Olé Touchpads and a PVIA10 Power Supply can support 66 Olé Touchpads. A combination of VIA! Touch panels and Olé Touchpads can be accomodated. Please consult the chart below for maximum current draw of each device.

NOTE: Only one power supply should be connected to the SPP Precision Panel at any time!

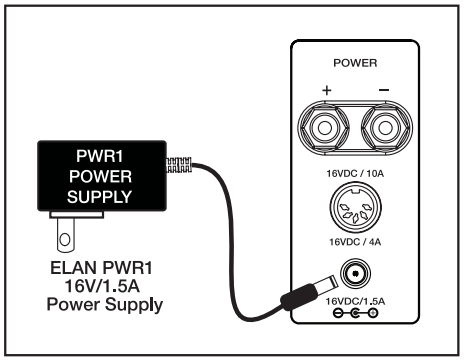
16V/4A Power Supply Connections



16V/10A Power Supply Connections



16V/1.5A Power Supply Connections



IMPORTANT NOTE
Olé Touchpads and VIA! Touch Panels

Use the correct power supply connected to the front of the SPP for the number of Olé Touchpads and VIA! Touch Panels in the system.

Olé = 150mA
VIA! = 1A

PWR1 = 1A
PWR4 = 4A
PWR10 = 10A

Figure 3-25: SPP Power Connections

© ELAN Home Systems 2009 • All rights reserved.

S128P Connections When NOT Using a System Precision Panel

Sense Trigger Input Connections

Information from ELAN™SENSE Sensors connected to the S128P's Sense Trigger Inputs is used to trigger events that have been programmed into VIA! Touch panels. To connect ELANSense sensors directly to the S128P, simply plug the 3.5 mm stereo interconnect cable of the Sensor into the desired Sense Trigger Input. If long runs are required, the 3.5 mm stereo interconnect cable must be cut off and the cable extended using Cat-5. Utilize VIA!TOOLS or ELANTOOLS setup software to create IR or serial command strings for automated functions. See VIA!TOOLS or ELANTOOLS Help for additional information about programming Sense Triggers.

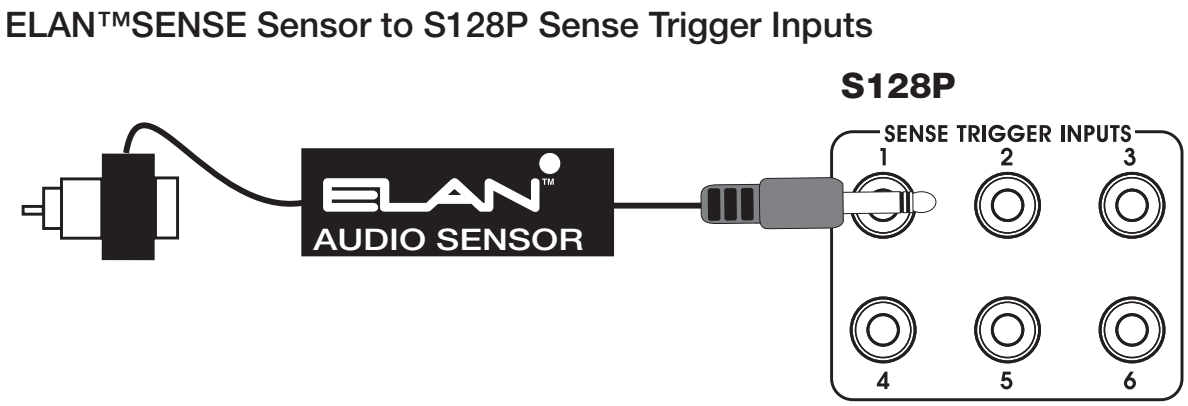
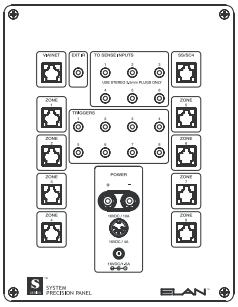


Figure 3-26: Sense Trigger Input Connections



ELAN
Precision Panels
save time
and make sense
out of complex
wiring jobs!

© ELAN Home Systems 2009 • All rights reserved.

VIA! Touch Panel Connections

If not using the SPP, it is necessary to use a PVIA Wall Plate when connecting VIA! Touch Panels to the S128P. VIA! Touch Panels require the 16V power supplies that are included with each PVIA wall plate (PVIA1, PVIA4, and PVIA10).

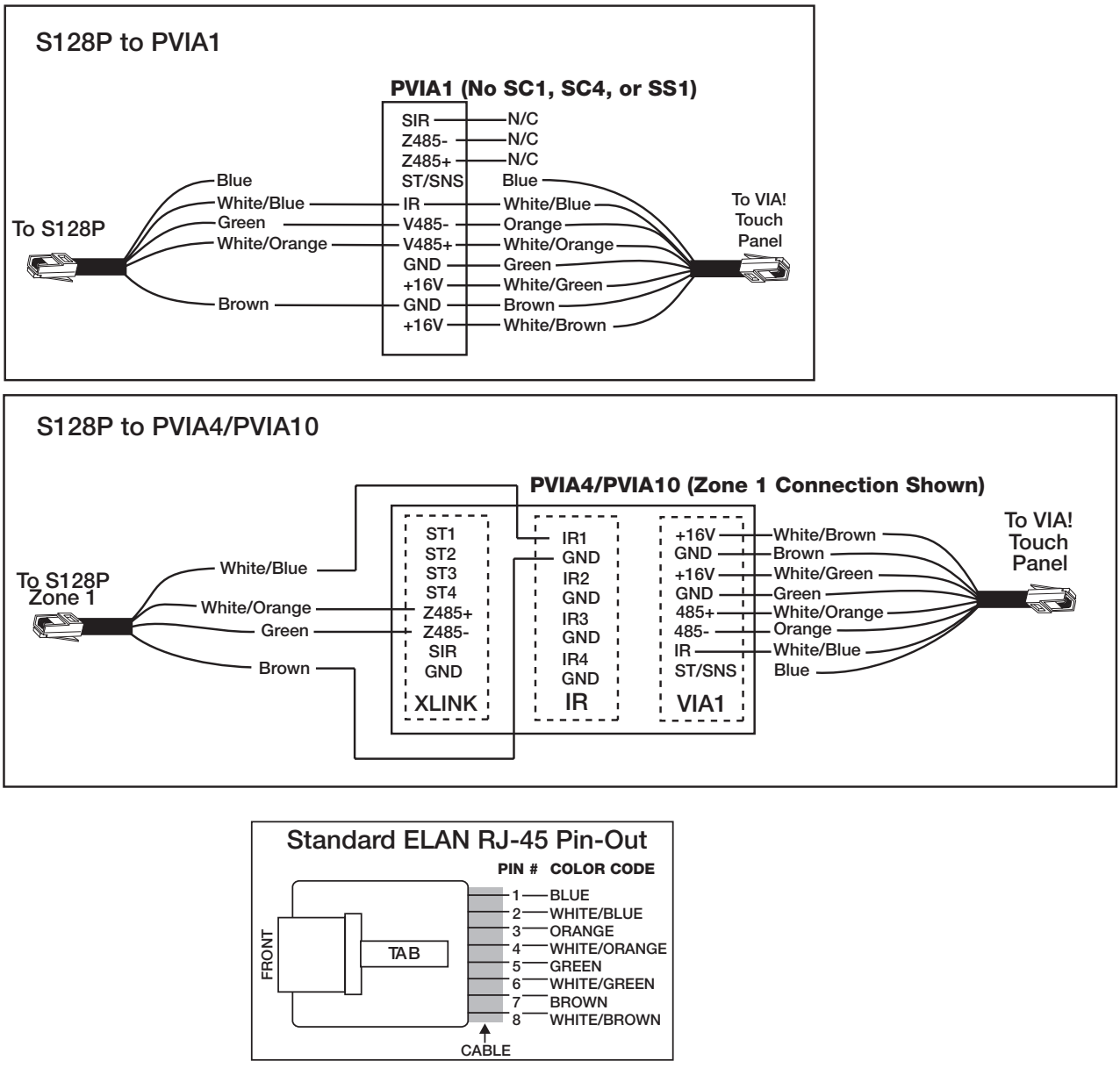


Figure 3-27: VIA! Touch Panel Connections (No SPP)

© ELAN Home Systems 2009 • All rights reserved.

Olé Touchpad Connections

ELAN Olé Touchpads require IR, RS-485+, RS-485-, 12 Volts DC, and Ground to function. Make these connections as shown below. Multiple keypads in the same zone require parallel connections. For simplicity, all eight wires can be connected straight through.

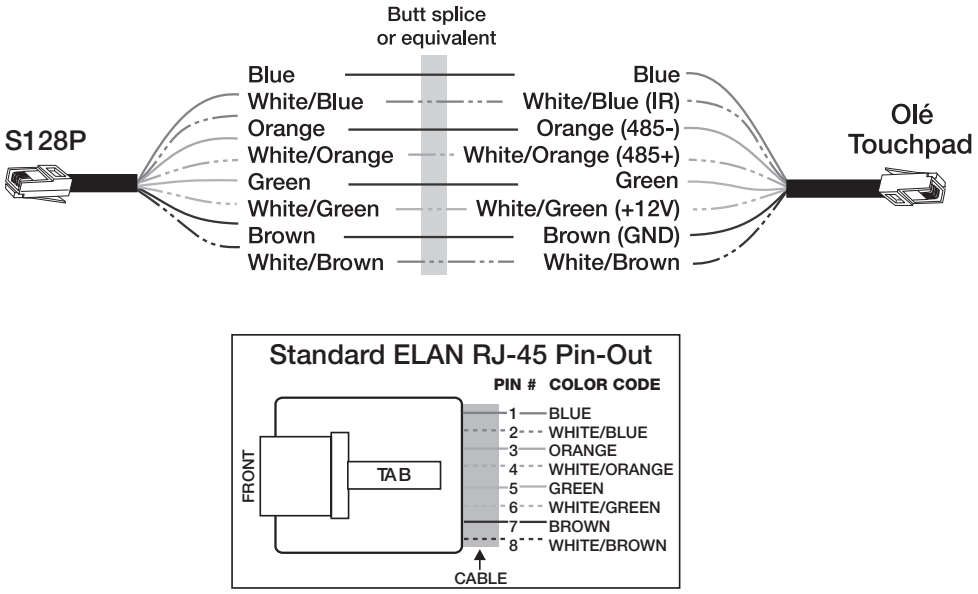


Figure 3-28: Olé Touchpad Connections (No SPP)

Keypad Connections

ELAN keypads require IR, RS-485+, RS-485-, 12 Volts DC, and Ground to function. Make these connections as shown below. Multiple keypads in the same zone require parallel connections. For simplicity, all pins can be connected straight through.

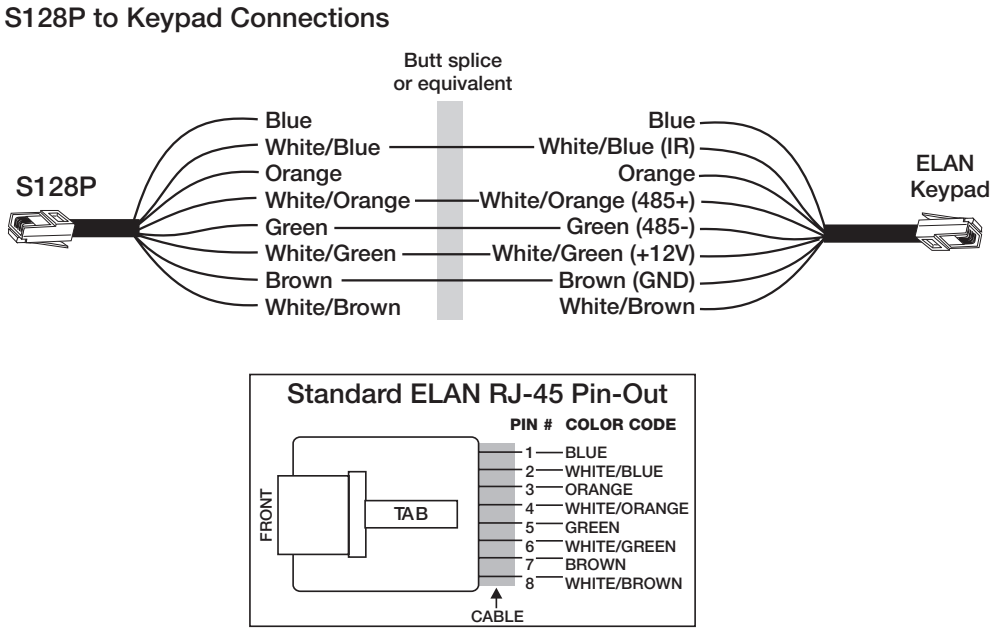


Figure 3-29: Keypad Connections (No SPP)

© ELAN Home Systems 2009 • All rights reserved.

Local Source Connections

Connect local audio sources to the LSWP Local Source Wall Plate using the stereo interconnect cables provided. Use Cat-5 from the LSWP to the S128P, and connect as shown below. Only one local source per zone can be connected.

Local Source Input Connections w/ LSWP

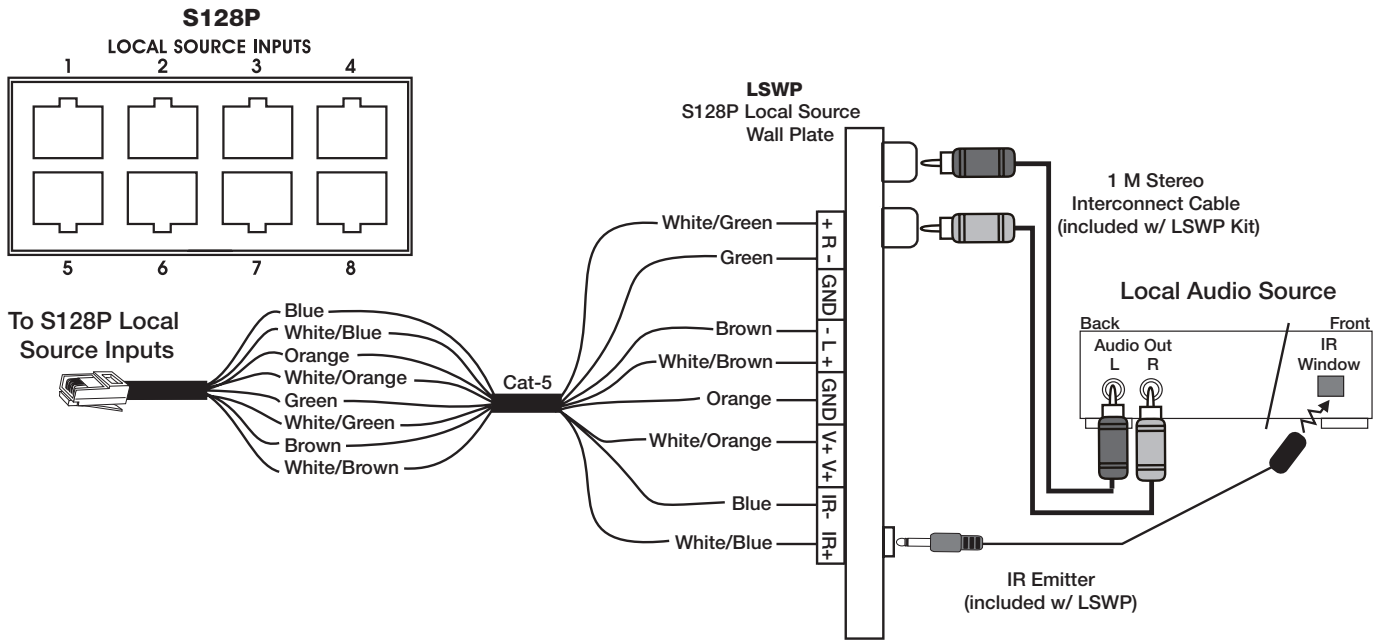


Figure 3-30: Local Source Input Connections

External IR Connections

It is necessary to provide +12VDC for any External IR device when not using a PS128P Precision Panel. Connect only the IR and GND leads from an IR receiver, keypad, or other IR device to the EXT IR IN port on the S128P. See VIA!TOOLS or ELANTOOLS Help for information about External IR programming.

External IR Receiver to S128P External IR Input

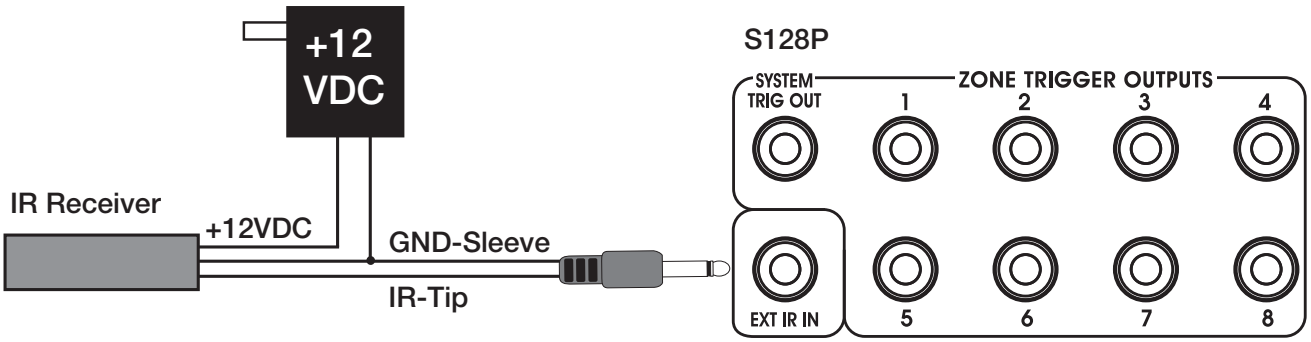


Figure 3-31: EXT. IR IN Connection

© ELAN Home Systems 2009 • All rights reserved.

VSE2 Electronic Volume Control Connections (No PVSE)

If not using a SPP or a PVSE Precision Panel, interconnects will need to be made between the electronic volume control, the S128P, the C2 Communications Controller, and the system amplifier. These connections include IR, 12VDC, Ground, and Override, as shown below.

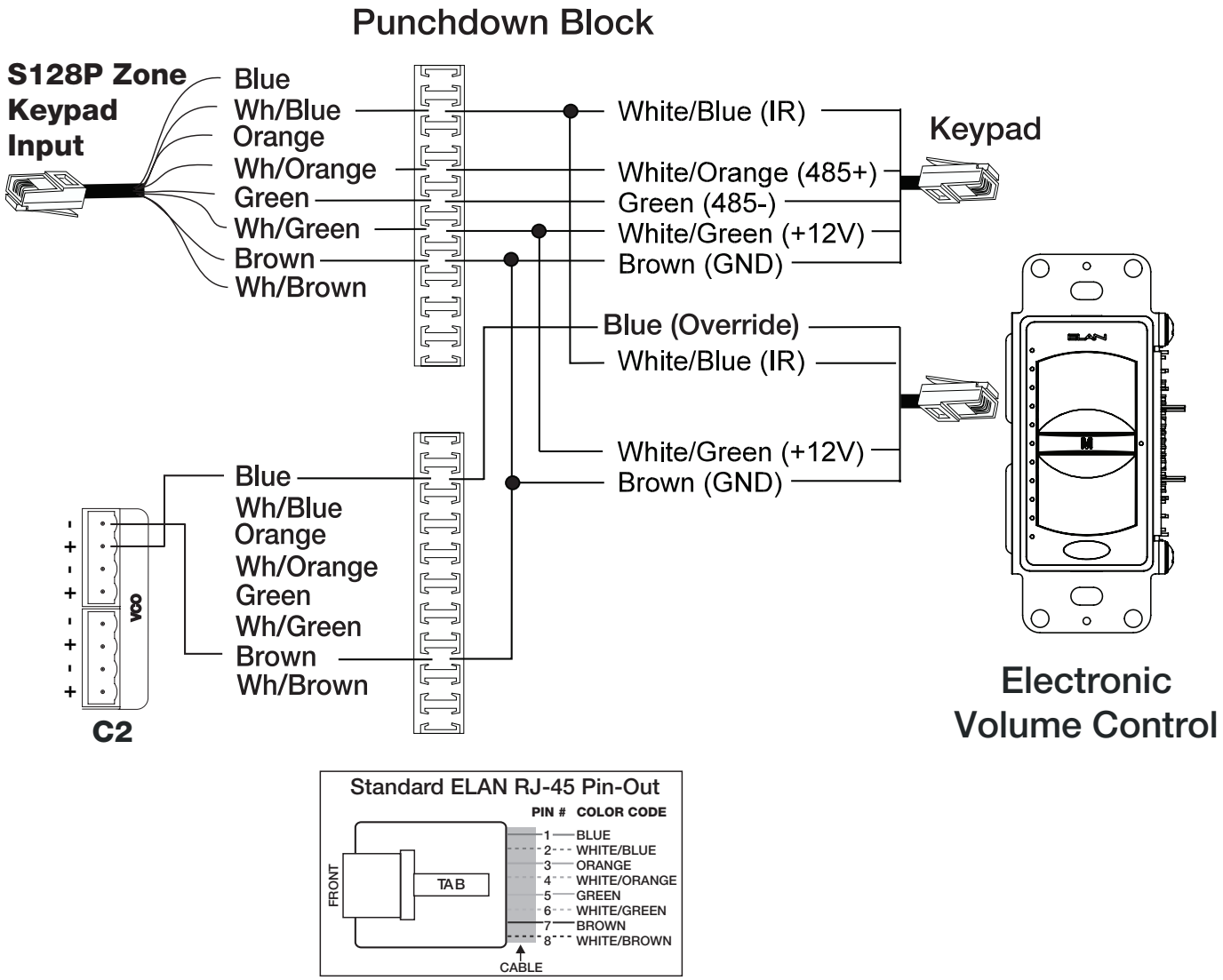
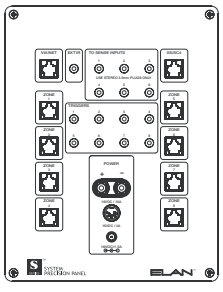


Figure 3-32: Electronic Volume Control Connections



ELAN Precision Panels save time and make sense out of complex wiring jobs!

C2 Connections (no SPP Precision Panel)

The diagram below shows the necessary connections when installing a C2 and an S128P without using a SPP Precision Panel. Use SUM if you want music to mute and the page/doorbell audio to be heard over the house speakers. SUM is used to trigger the page/doorbell input of an ELAN S128P. Required connections include:

- SUM Trigger Output from C2 to Page IN of S128P
- PG & DB OUT from C2 to PAGE IN of S128P
- MOH OUT from S128P to MOH IN of C2
- PAGE OUT from S128P #1 to PAGE IN of S128P #2 etc. (for multi-chassis systems - see **System Expansion**)

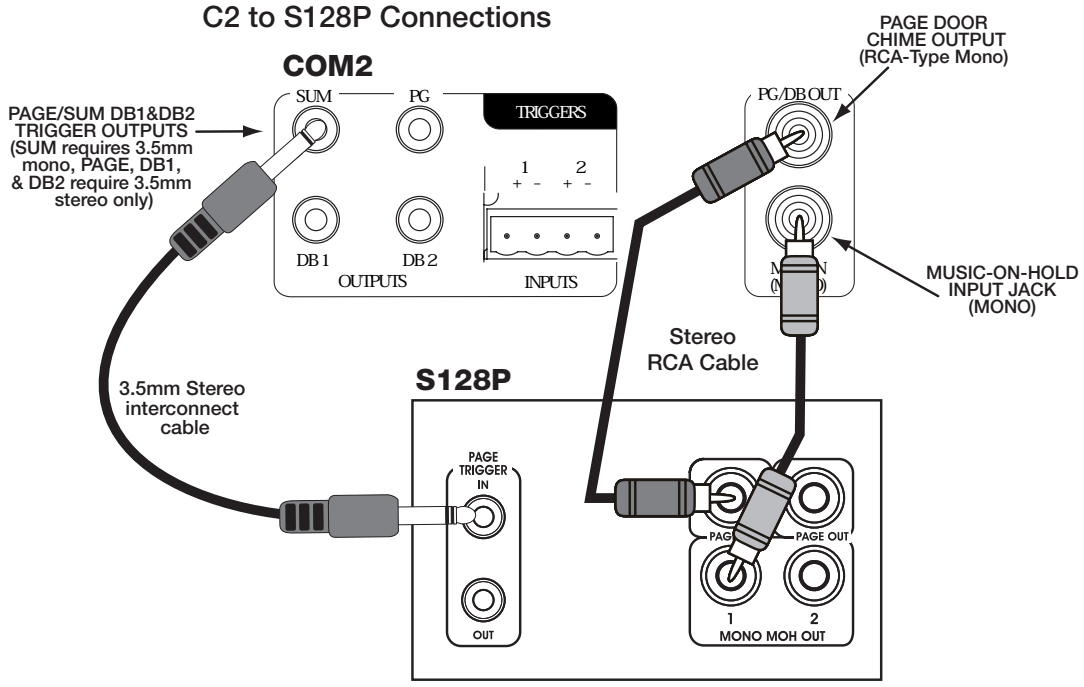


Figure 3-33: C2 to S128P Connectivity

C2 to S128P Audio Connections

Using a stereo RCA interconnect cable, connect C2 PAGE & DB OUT to the S128P's PAGE IN, and one of the S128P's MONO MOH OUT jacks to the MOH IN of the C2.

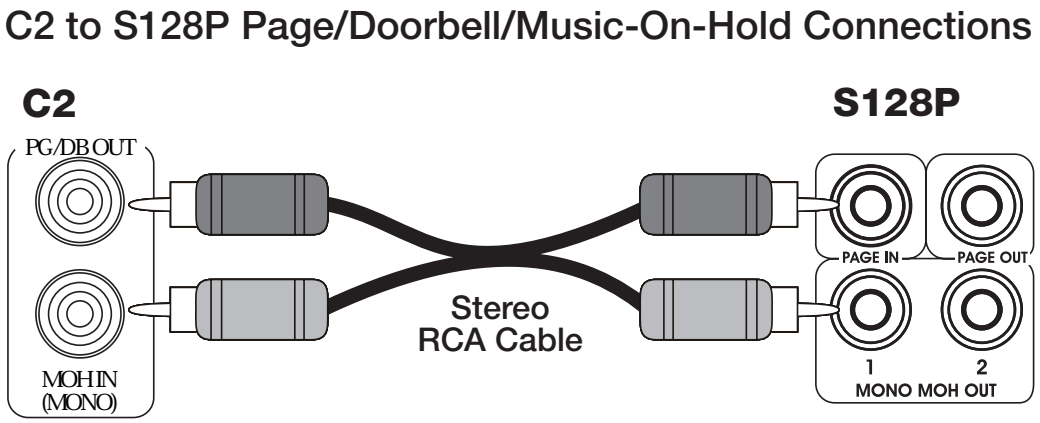


Figure 3-34: C2 to S128P Audio Connections

© ELAN Home Systems 2009 • All rights reserved.

IR Connections

Source IR Emitter Output Connections

The S128P features 12 source-specific IR emitter outputs. Each of these outputs is active only when the assigned source is selected. This makes it possible to use identical source components and still have the capability of separate control. For ELAN multi-output sources such as VIA!dj or DTNR, VIA!TOOLS setup software will automatically route IR out of each IR port that the source is assigned to. The example below shows a VIA!dj that is connected to Audio Inputs 1, 2, 3, and 4. Any of IR Emitter Outputs 1 through 4 can be used to control the VIA!dj. To connect non-ELAN multi-output sources, see IR 'ALL' Output Port Connections below.

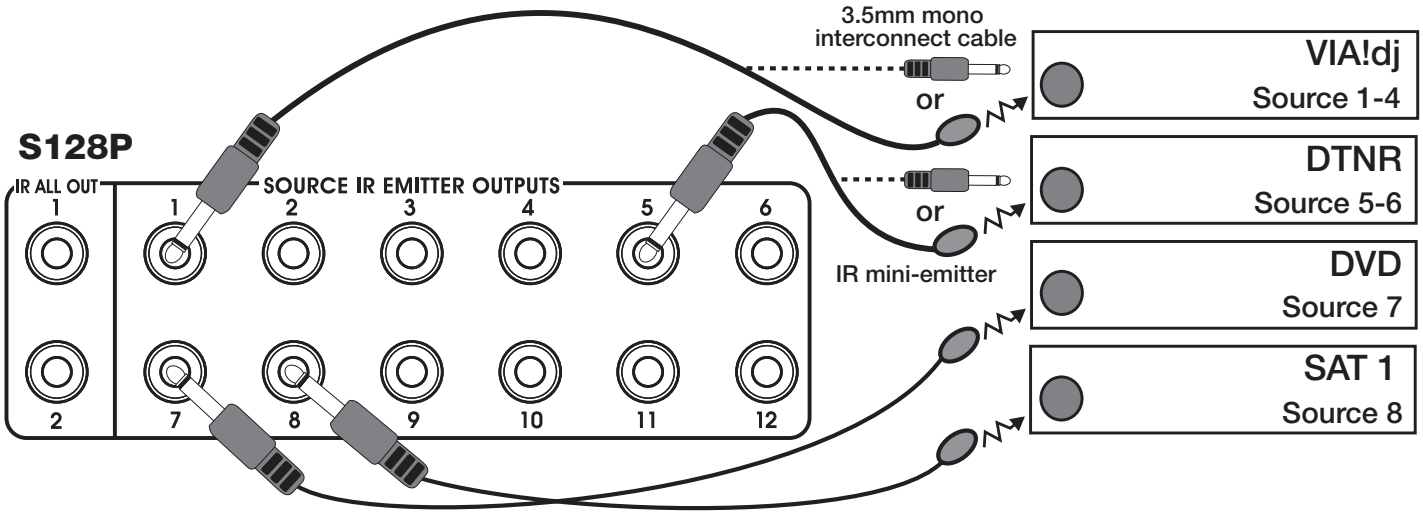


Figure 3-35: Source IR Emitter Connections

IR 'ALL' Output Port Connections

Two 'ALL' IR outputs are provided for controlling additional components such as TVs or A/V Receivers that may require control regardless of the source currently selected. These ports are chassis-specific and always active: any IR signal sent into S128P Chassis #1 comes out the 'ALL' IR outputs of Chassis #1 as shown below. When a non-ELAN multi-output source requires control from more than one chassis, an ELAN Dual Plug IR emitter should be used. The 'ALL' ports are also useful when controlling several non-identical sources. For really large installations, an 'ALL' port can be routed to an IR Distribution Block and sent to several sources.

Note: 'ALL' IR port functionality does not span chassis.

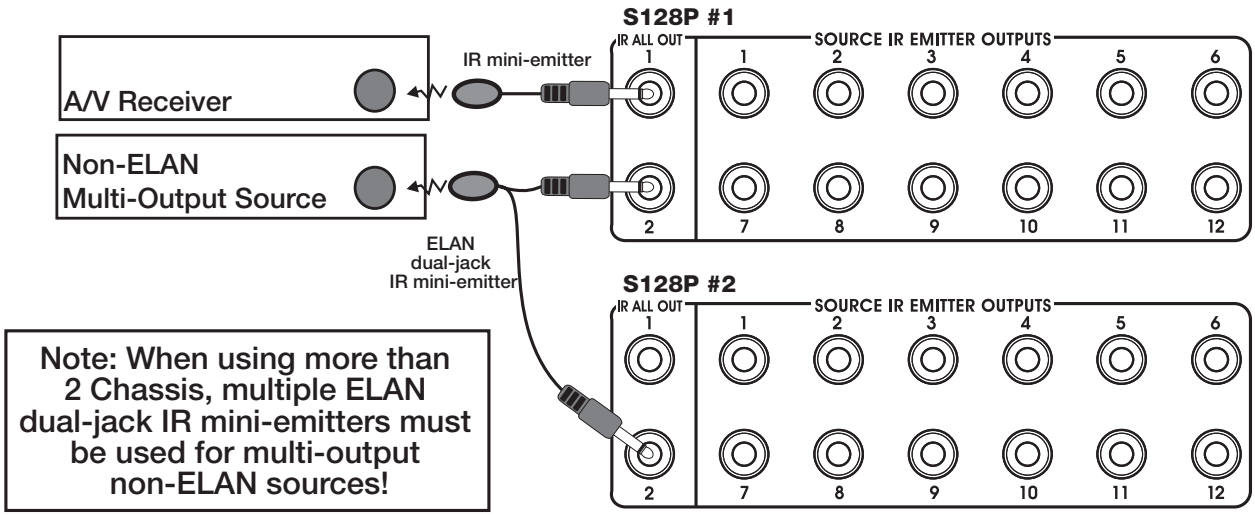


Figure 3-36: IR ALL Output Connections

© ELAN Home Systems 2009 • All rights reserved.

Trigger Output Connections

Unit Trigger Output Connections

The Unit Trigger Output sends a 12VDC Trigger whenever any zone of the S128P is turned on. Use this trigger for system-wide functions such as un-muting a D660 amplifier or turning on a Z•Power Controller.

Note: The Unit Trigger Output is chassis-specific. If any zone of a chassis is active, that chassis' Unit Trigger Output is active.

S128P Unit Trigger Output to D660 All On Input

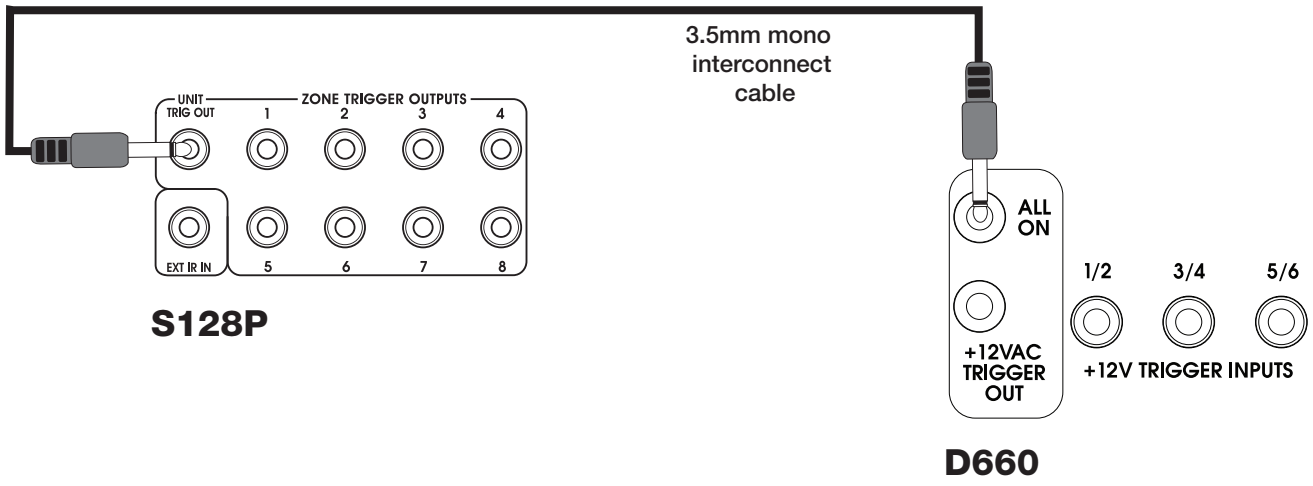


Figure 3-37: Unit Trigger Output Connection

Zone Trigger Output Connections

There are 8 zone-specific Trigger outputs on the S128P. Use these when zone specific functions are desired. For example, use the Zone Trigger Outputs to mute/un-mute specific channels on a D12 or D660 amplifier.

S128P Zone Trigger Outputs to D660 Zone Trigger Inputs (Zones 1 & 4 Shown)

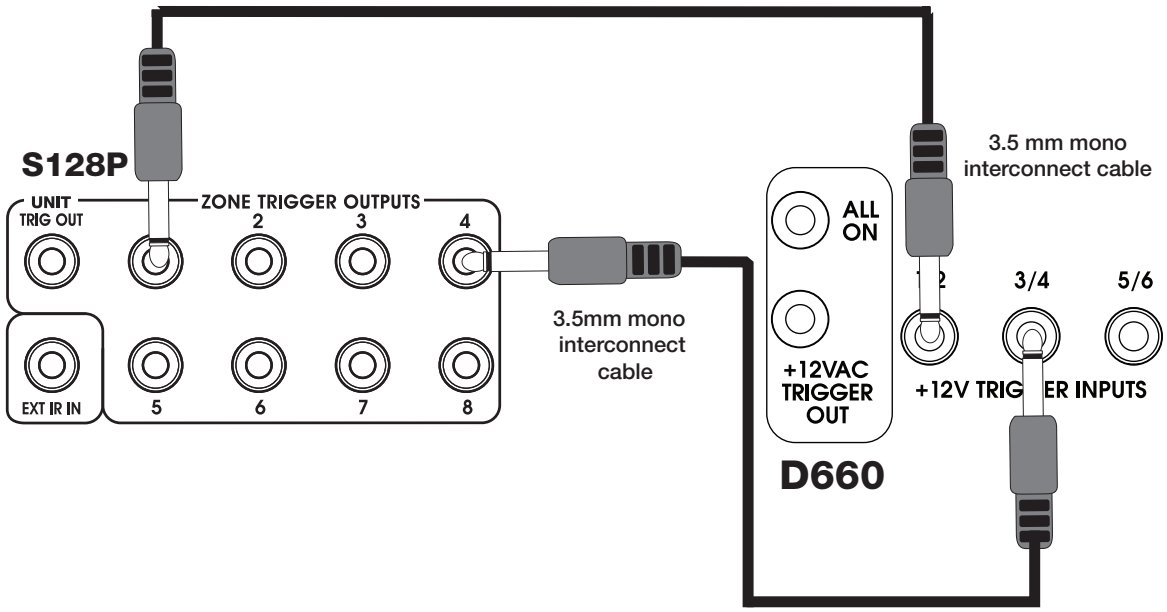


Figure 3-38: Zone Trigger Output Connections

© ELAN Home Systems 2009 • All rights reserved.

Audio Connections

There are 12 Audio Source Inputs and 12 Audio Source Loop Outputs on the S128P. Each system source will be connected to a specific Source Input, allowing audio distribution to any zone of the S128P. Each Source Input corresponds to the same numbered IR Output port.

Source Input Connections

Connect the Left/Right audio output of each source to the Left/Right Source Input using stereo RCA audio cables. Make sure to maintain Left/Right channel connections.

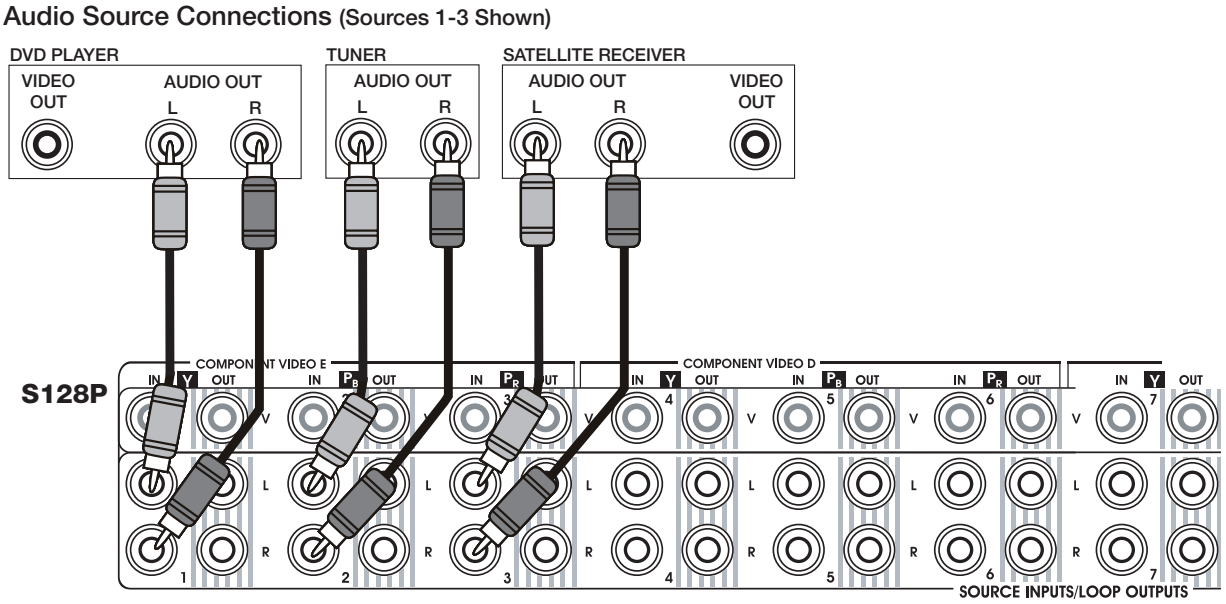


Figure 3-39: Source Input Connections

Loop Output Connections

Ideal for sharing sources with Home Theaters, these buffered Loop Outputs pass line-level audio directly out of the corresponding Source Input. This audio is buffered, therefore no signal loss will occur. Use RCA audio cables to connect a Loop Output to a Home Theater receiver or an additional S128P chassis.

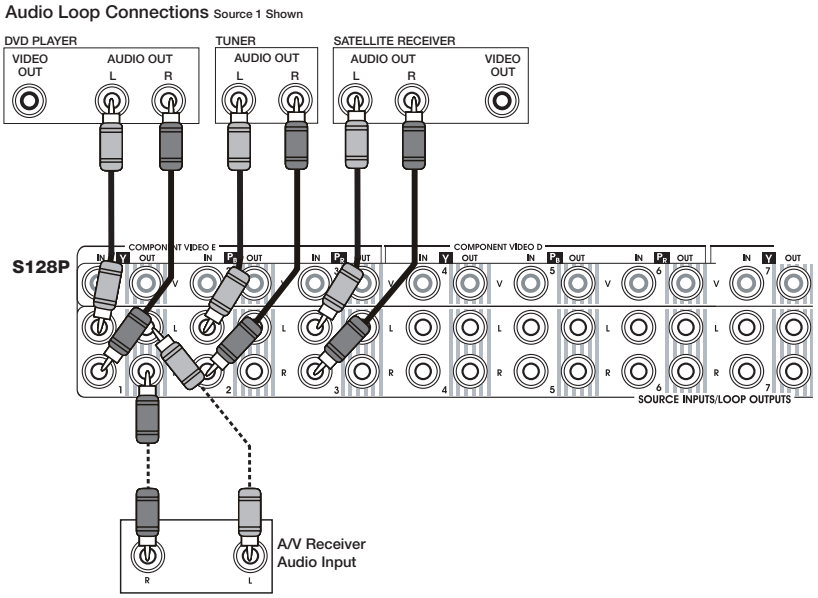


Figure 3-40: Loop Output Connections

© ELAN Home Systems 2009 • All rights reserved.

Zone Outputs

Variable Zone Output Connections

The S128P has both Fixed and Variable Zone Audio Outputs to increase system flexibility. Variable zones are controlled using IR or serial commands to ramp volume up and down at preamp level.

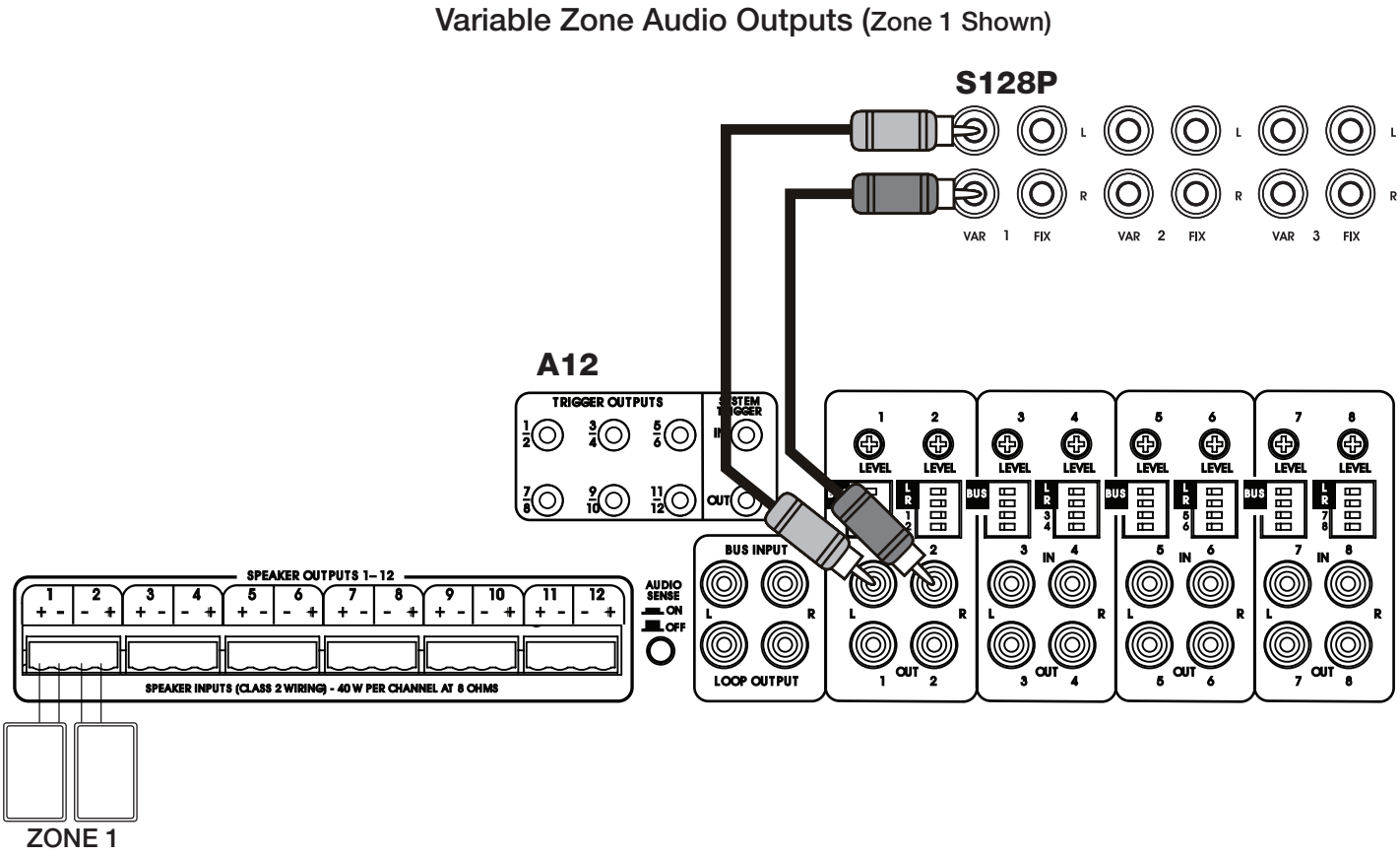


Figure 3-41: Variable Zone Output Connections

© ELAN Home Systems 2009 • All rights reserved.

Fixed Zone Output Connections

Fixed zones deliver line-level audio at full output (100% volume). Use volume controls in Fixed zones to adjust volume up and down in sub-zones. The use of ELAN impedance matching volume controls allows increased speaker loads and increased system flexibility.

Note: Variable Zone Audio Outputs can utilize all DSP functions such as Bass, Treble, Volume, Source Leveling and Dynamic Range Compression. Fixed Zone Audio Outputs utilize none of these functions, therefore zones and sub-zones may sound different from each other.

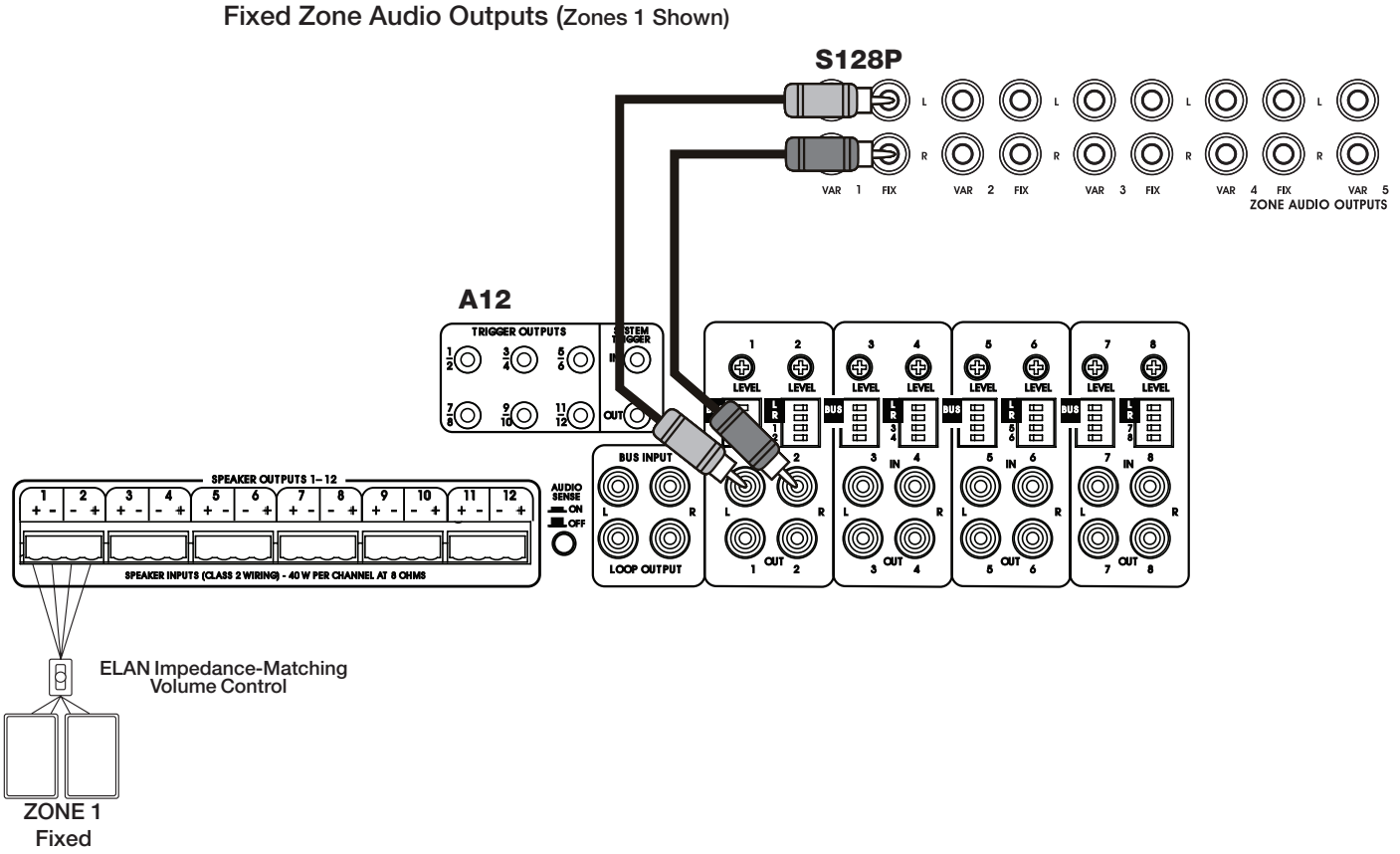


Figure 3-42: Fixed Zone Output Connections

© ELAN Home Systems 2009 • All rights reserved.

Fixed and Variable Zone Output Connections

The S128P has the ability to send a Fixed output and a Variable output simultaneously. This feature can be used to great advantage when utilizing sub-zones. Audio that is routed out of the Variable zone outputs will ramp volume up and down at line-level using IR or RS-232 commands. Audio that is routed out the Fixed outputs will be adjusted using volume controls.

Fixed/Variable Zone Audio Outputs (Zones 1 Shown)

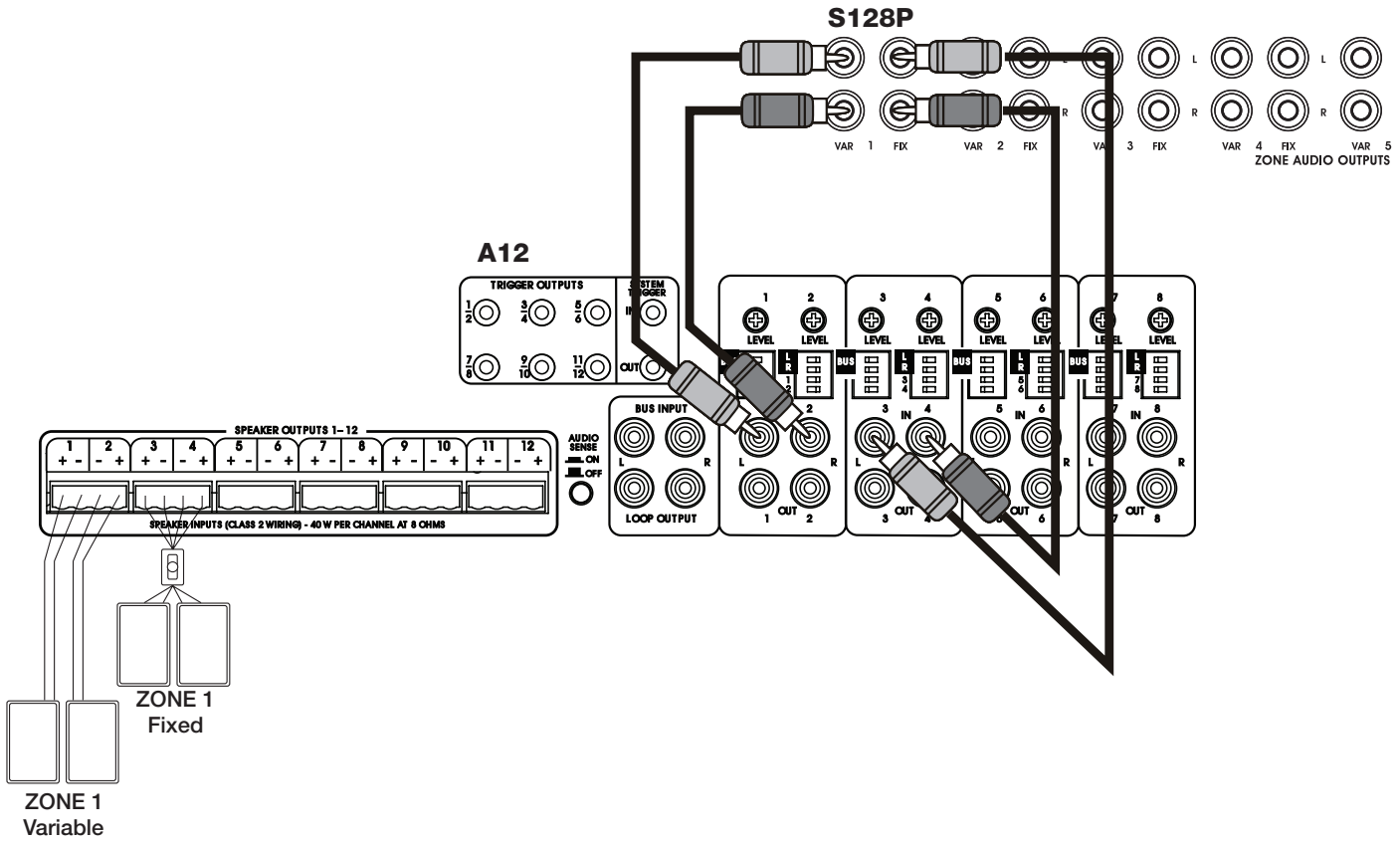


Figure 3-43: Fixed and Variable Zone Output Connections

© ELAN Home Systems 2009 • All rights reserved.

ELAN RS-232 Serial Port Connections

SS1 System Station to S128P Connections

The SS1 System Station allows many advanced features in an S128P system. Wireless VIA! Touch Panels can communicate with the S128P and other sub-systems through RS-232 or IR. Connectivity between the SS1 and the S128P is done through two cables (included with the SS1); a 15-pin cable for IR and RS-485, and a 9-pin cable for RS-232. Connect these cables as shown below. Please consult the SS1 System Station Installation Manual for important information regarding the use of this product.

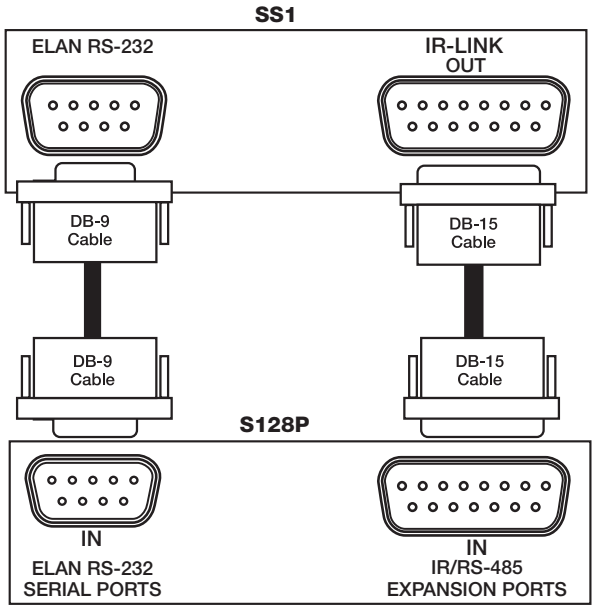


Figure 3-44: SS1 to S128P Connections

VIA!®SC-4* to S128P Connections

When controlling a S128P with ELAN's VIA!SC-4 System Controller, use the 6-Pin DIN-to-9-Pin serial cable and the male-to-male DB9 gender-changer that is included with the SC-4. Plug the 6-Pin DIN (round) connector into the SC-4's ELAN RS-232 OUT port. Using the gender-changer, plug the other end of the serial cable into the ELAN RS-232 IN port on the S128P. The SC-4 will always be connected to Chassis #1 in a multi-chassis system.

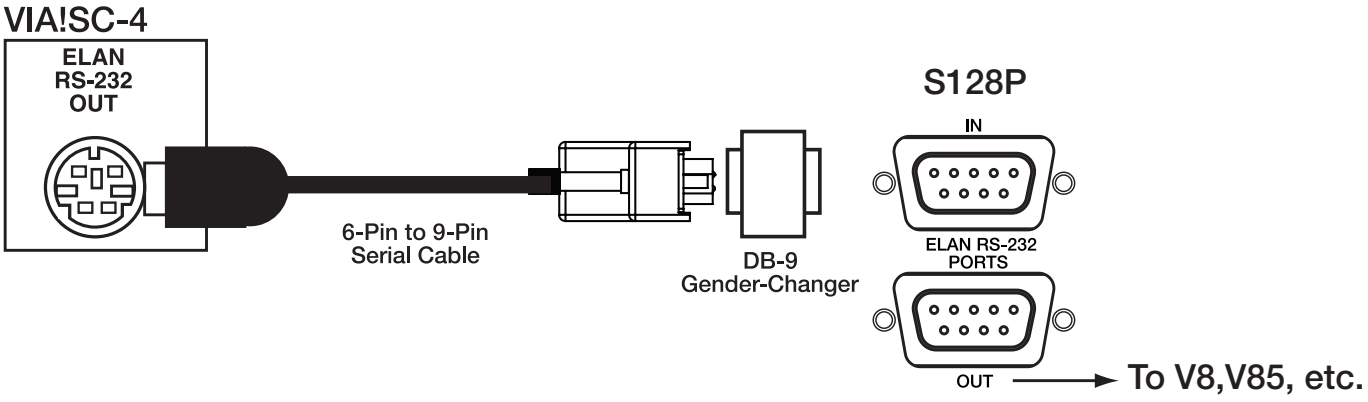


Figure 3-45: SC4 to S128P Connections

Note: The SC-4 is a discontinued product.

© ELAN Home Systems 2009 • All rights reserved.

PV12 Video Precision Panel

The PV12 Video Precision Panel provides a clean and easy way to connect up to 12 runs of coaxial cable to the S128P A/V Controller. Twelve gold-plated F-to-RCA barrel connectors are mounted on flanges angled at 45 degrees. The angled flanges ensure that all coax runs slide easily back into the wall after termination, and that the cables are not bent past their specified limits, which can cause damage resulting in signal loss. The PV12 is one of ELAN's new 'half-frame' Precision Panels. Two 'half-frame' panels can be mounted in one PF2 Precision Panel Frame, giving you the flexibility to mix and match the Precision Panels needed to complete a neat, problem-free trim-out. Two PV12s can be mounted in one frame to accommodate the16 video outputs of the S128P.

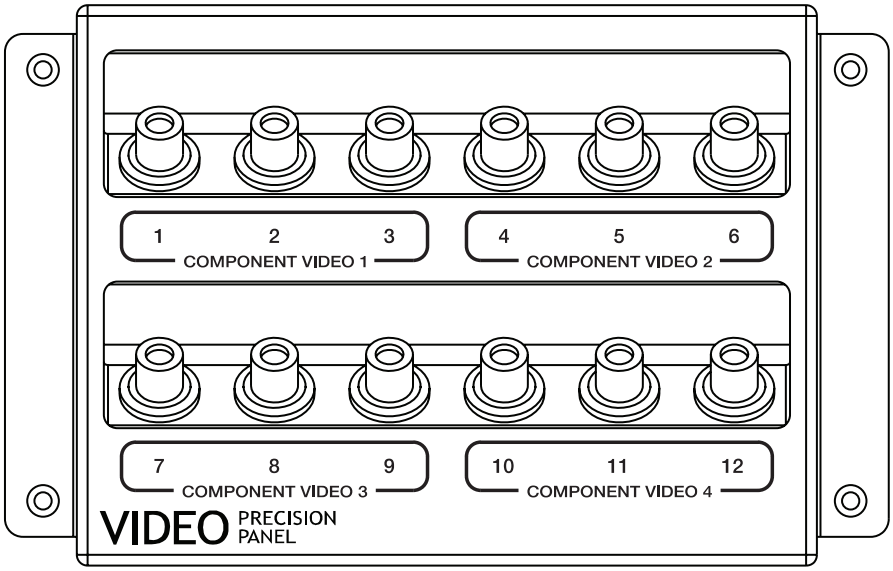


Figure 3-46: PV12 Video Precision Panel

Video Switching

The vast array of built-in video switching features is part of what makes the S128P so powerful! When properly configured, large video routing projects become a simple matter of "Auto-Building" IR or RS-232 commands using VIA!TOOLS or ELANTOOLS setup software. The S128P has a 16 input by 16 output video switcher that can distribute Composite, Component and High Definition video to any zone. The number of video sources, and the number of zones that they can be distributed to, depends on whether you are using single-input/output Composite video signals, or 3-input/output Component video signals. The tables below show the video switcher's distribution capabilities with different combinations of Composite/Component video sources.

Video Source Inputs			*Video Outputs*	
Available Composite Video Sources	**Available Component Video Sources**		**Available Composite Video Outputs**	**Available Component Video Outputs**
16	0		16	0
13	1		13	1
10	2		10	2
7	3		7	3
4	4		4	4
1	5		1	5

Table 3-1: Video Switching

© ELAN Home Systems 2009 • All rights reserved.

Default Tracking Mode

For many systems, one-to-one audio/composite video switching may be all that is required. Default Tracking Mode is the default audio/video switching mode for the S128P, and requires no additional programming. By default, the first twelve video inputs of the S128P are directly tied to, or 'track' with, the twelve audio inputs. This means that the audio and composite video signals of Sources 1-12 will switch simultaneously when selected from a zone without any additional programming. Additionally, in Default Tracking Mode, Video Inputs 13-16 remain available for additional Composite video sources such as CCTV cameras. These inputs can be programmed for selection in any zone.

In Default Tracking Mode, there are two pre-configured video outputs for each zone. The first output is pre-configured for a VIA! Touch Panel, the second output for a TV/monitor. When a video source is selected in a zone, both of these video outputs will automatically route the selected source video to that zone (see **Video Zone Output Connections** for further details).

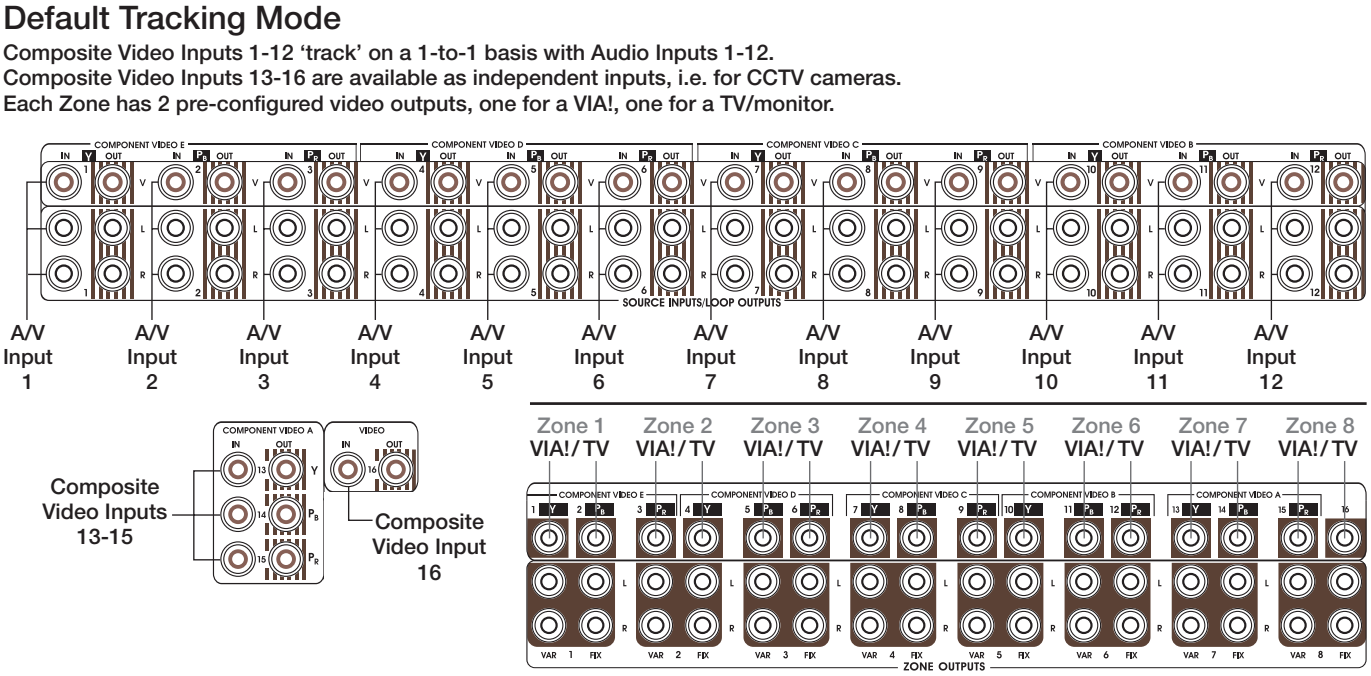
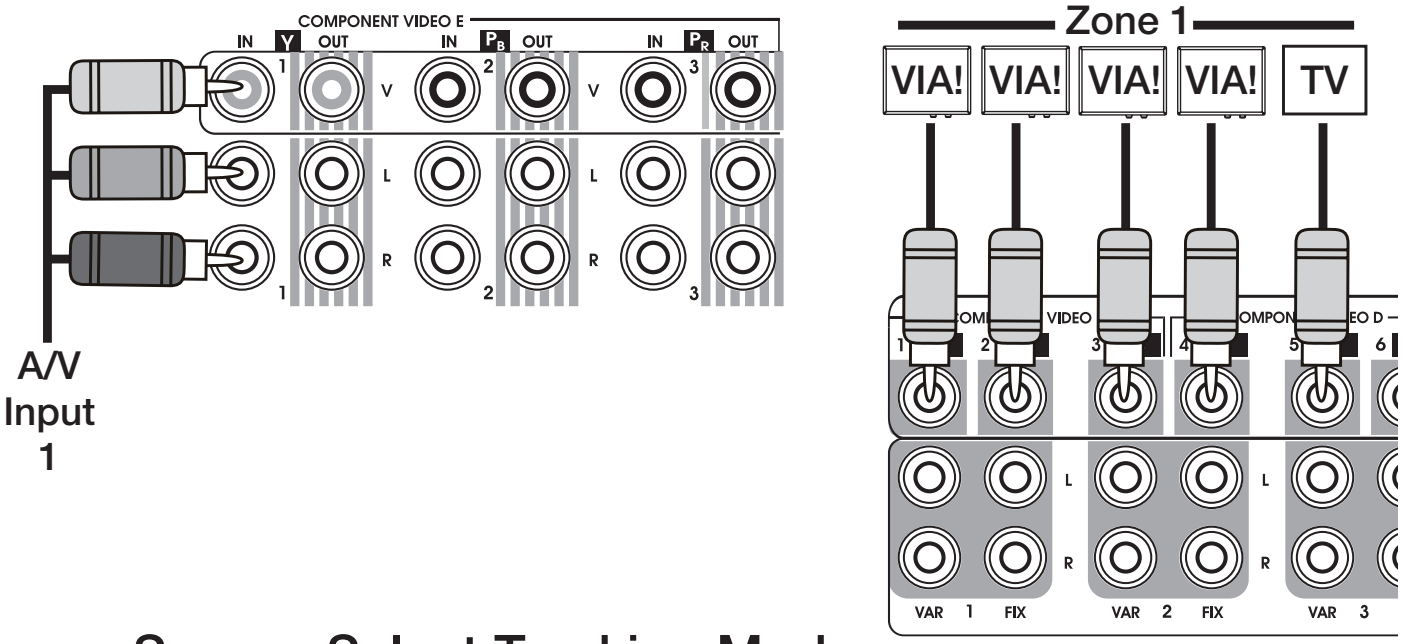


Figure 3-47: Default Tracking Mode

© ELAN Home Systems 2009 • All rights reserved.

Source-Select Tracking Mode

Should more than the two default video outputs be needed in a zone, VIA!TOOLS or ELANTOOLS setup software provides an easy way to automatically route up to five composite video outputs, plus one component video output (three jacks), to a zone using a single source-select IR or RS-232 command. This not only facilitates quick programming, but also eliminates the delays inherent when multiple IR commands are chained together to perform multiple input/output select functions. See VIA!TOOLS or ELANTOOLS Help tutorials for step-by-step programming instructions.



Source-Select Tracking Mode

Programmed in VIA!TOOLS or ELANTOOLS setup software.
Automatically routes up to 5 Composite video outputs, plus
1 Component video output, to a zone when a source is selected.

Figure 3-48: Source Select Tracking Mode

16 x 16 Mode

The S128P also performs video matrix switching, meaning that any of its 16 video inputs can be routed to any of its 16 video outputs, singly or in groups. By far the most flexible option for advanced video routing, 16 x 16 mode also requires a great deal more programming. Unlike Tracking mode, where no additional programming is necessary for the simultaneous switching of audio and video, or Source-Select mode, where multiple outputs switch automatically when a source is selected, 16 x 16 mode requires that each video input and output be 'told' what to do through programming. Essentially, a button on a VIA! Touch Panel or a keypad will be programmed with a specific input-select command(s) and output-select command(s). Specific instructions on S128P video programming are provided with VIA!TOOLS or ELANTOOLS Setup Software (revision 5.0 or higher).

© ELAN Home Systems 2009 • All rights reserved.

Composite Video Source Connections

Use high quality RCA video interconnect cables for most source connections. Sources requiring long cable runs (CCTV cameras, for example) may require the use of RG-6 or RG-59 coax with F-to-RCA adaptors.

Composite Video Source Connections

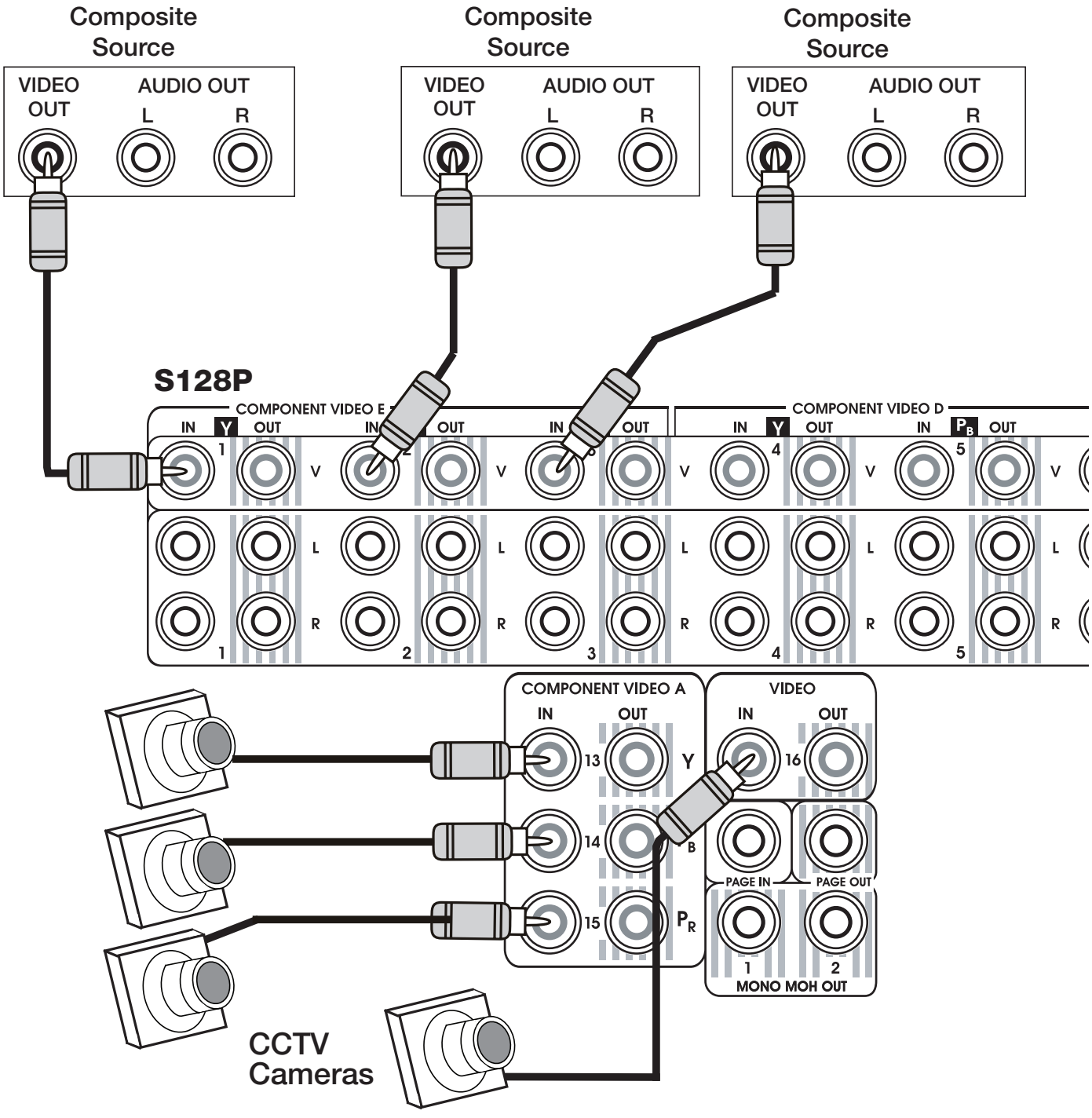


Figure 3-49: Composite Video Source Connections

© ELAN Home Systems 2009 • All rights reserved.

Component Video Switching

Component (Y, PB, PR) video signals can easily be switched by the S128P. Each Component video source utilizes three video inputs; one for Y, one for PB, and one for PR (Green, Blue, and Red). These inputs are grouped together through programming to switch as one entity.

Component inputs are designated on the rear panel of the S128P in reverse order.

These groups are labeled:

- A: Inputs 13, 14, 15
- B: Inputs 10, 11, 12
- C: Inputs 7, 8, 9
- D: Inputs 5, 5, 6
- E: Inputs 1, 2, 3

Use high quality component video cables to connect component sources to the S128P as shown below. Make sure to connect the propercomponent cable to the proper video input jack (Y, P_B, P_R).

Component Video Source Connections

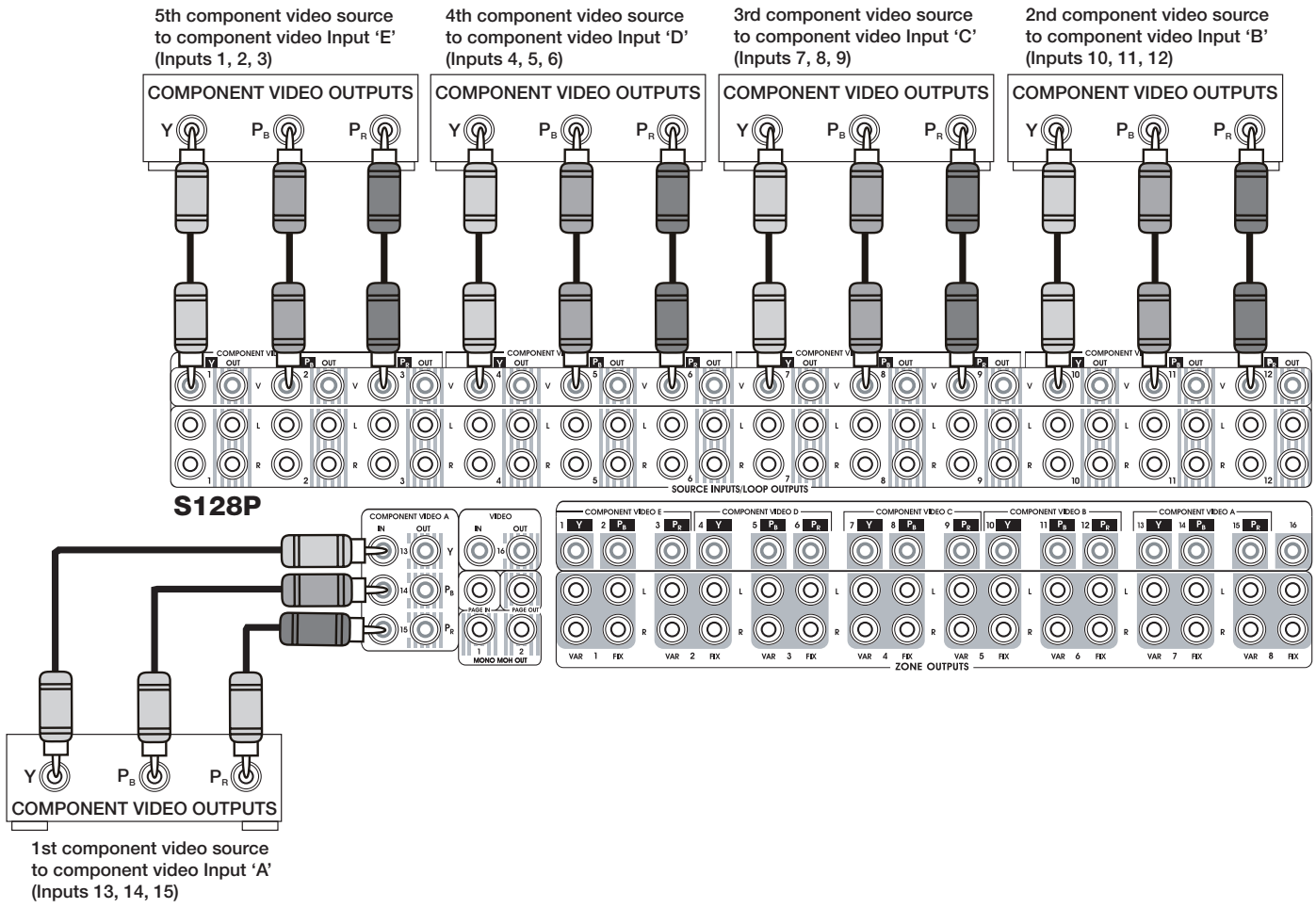

5th component video source to component video Input 'E' (Inputs 1, 2, 3)
4th component video source to component video Input 'D' (Inputs 4, 5, 6)
3rd component video source to component video Input 'C' (Inputs 7, 8, 9)
2nd component video source to component video Input 'B' (Inputs 10, 11, 12)
COMPONENT VIDEO OUTPUTS
Y
PB
PR
S128P
SOURCE INPUTS/LOOP OUTPUTS
ZONE OUTPUTS
COMPONENT VIDEO A
COMPONENT VIDEO B
COMPONENT VIDEO C
COMPONENT VIDEO D
COMPONENT VIDEO E
VIDEO
MONO MON OUT
1st component video source to component video Input 'A' (Inputs 13, 14, 15)

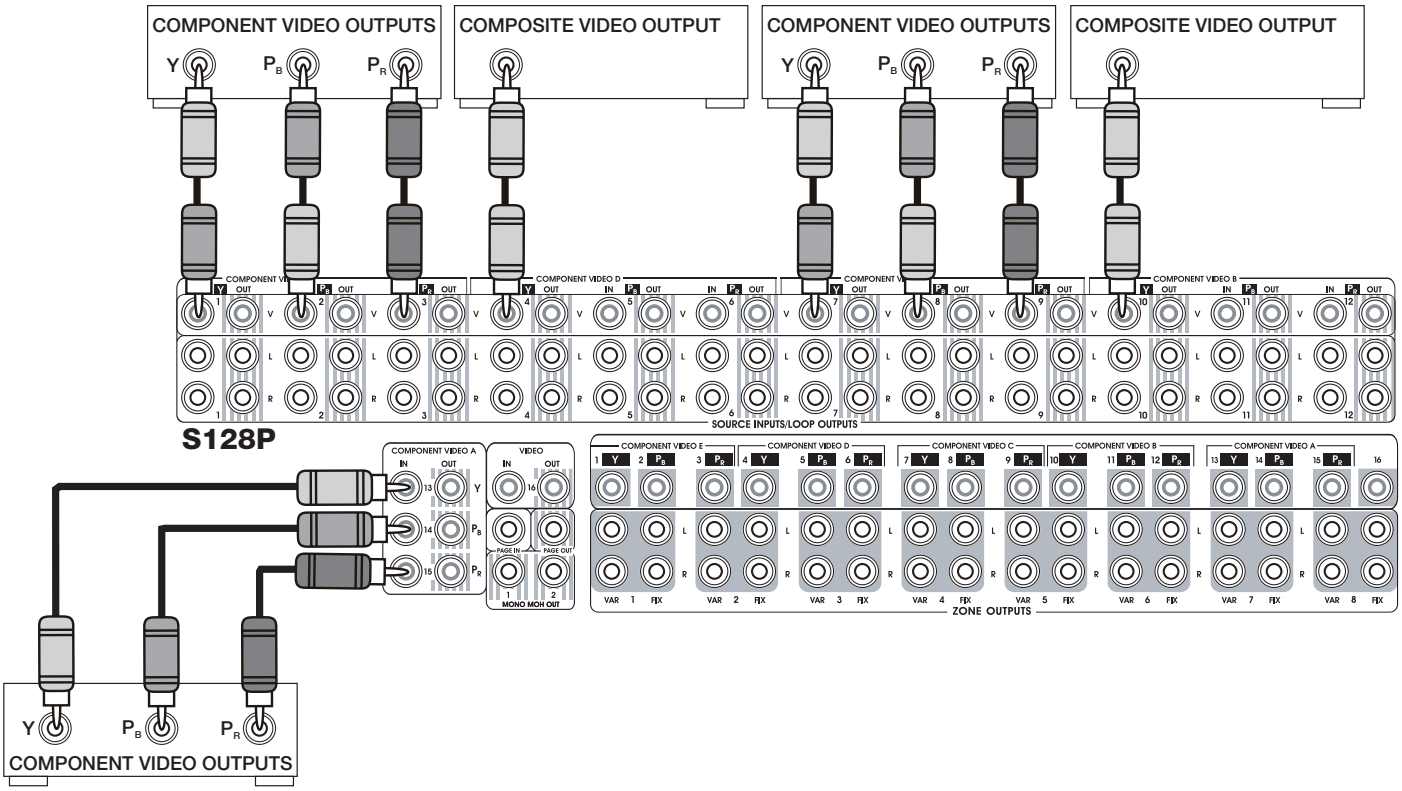
Figure 3-50: Component Video Switching

© ELAN Home Systems 2009 • All rights reserved.

Combination Component/Composite Video Connections

Utilizing the matrix capabilities of the S128P, it is possible to switch both Component video and Composite video at the same time. Certain inputs will be assigned in groups of three to facilitate Component switching, while other inputs will remain independent and will switch according to how they are programmed. Please consult VIA!TOOLS or ELANTOOLS setup software for information about S128P video programming.

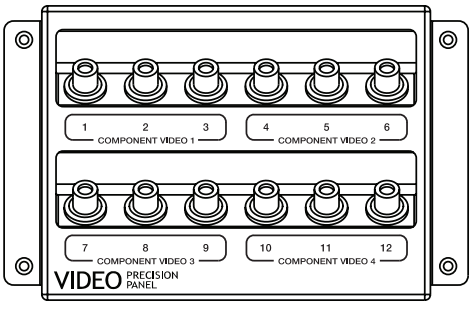
Component/Composite Video Source Connections



1st Component Video Source
To Component Video Input 'A'

Figure 3-51: Component and Composite Video Connections

Use PV12 Video Precision Panels for S128P Video Outputs to VIA! Touch Panels and TVs



© ELAN Home Systems 2009 • All rights reserved.

Video Output Connections

Video outputs consist of Zone Outputs and Source Loop Outputs. Use high quality video interconnect cables for all video connections. Video Zone Output Connections: Composite Default Tracking Mode; in the Default Tracking Mode, there are two pre-configured video outputs for each zone. The first output is configured for a VIA! Touch Panel, the second output for a TV/monitor. When a video source is selected in a zone, both of these video outputs will automatically route the selected source video to that zone. The audio will also be automatically routed to the zone.

The default Composite video zone outputs are:
- Zone 1: Video Outputs 1 - 2 • Zone 5: Video Outputs 9 - 10
- Zone 2: Video Outputs 3 - 4 • Zone 6: Video Outputs 11 - 12
- Zone 3: Video Outputs 5 - 6 • Zone 7: Video Outputs 13 - 14
- Zone 4: Video Outputs 7 - 8 • Zone 8: Video Outputs 15 - 16

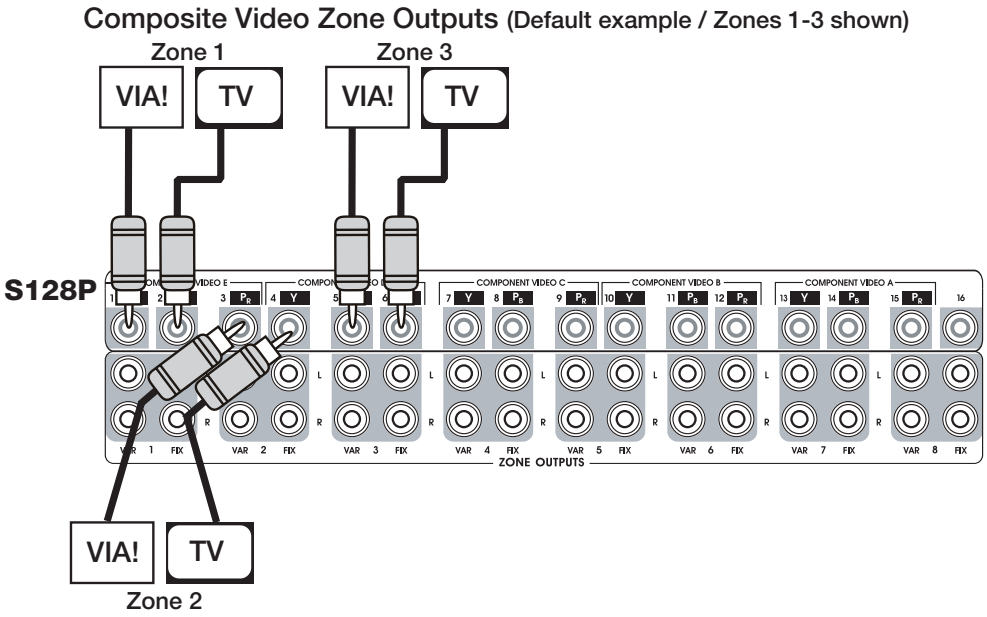


Figure 3-52: Default Composite Video Zone Outputs Example #1

As shown in the diagram below, not every zone will have both a VIA! Touch Panel and a TV/monitor, therefore both Zone Video Outputs may not always be used.

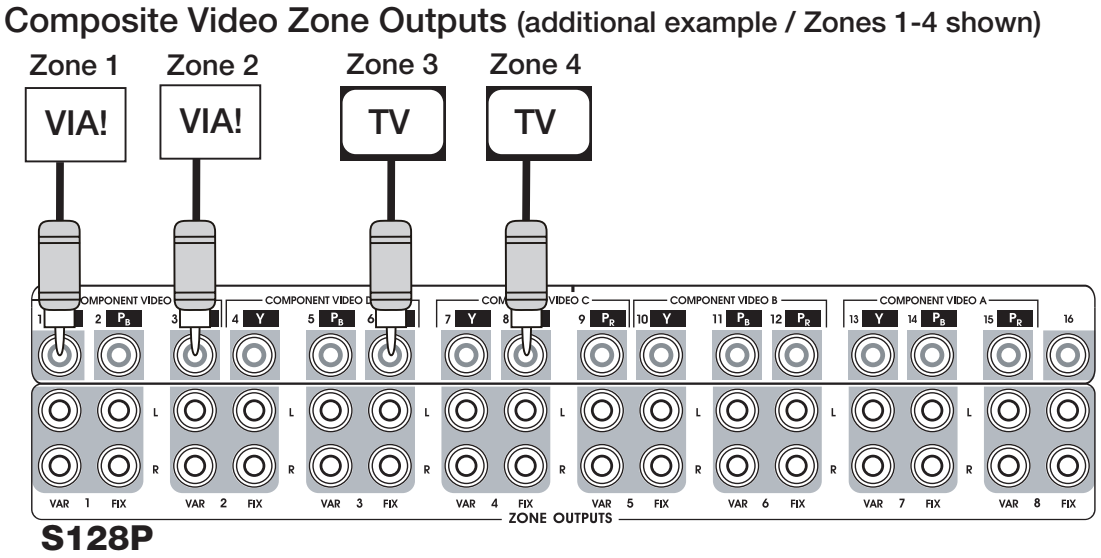


Figure 3-53: Default Composite Video Zone Outputs Example #2

© ELAN Home Systems 2009 • All rights reserved.

Video Zone Output Connections: Component

Component video outputs are grouped using VIA!TOOLS or ELANTOOLS setup software. As with the Component video inputs, these outputs are designated by a letter and go backwards in order. Output 16 is not used as a Component video output.

These groups are labeled:
- A: Outputs 13, 14, 15 • D: Outputs 4, 5, 6
- B: Outputs 10, 11, 12 • E: Outputs 1, 2, 3
- C: Outputs 7, 8, 9

Use high quality Component video cables to connect from the S128P's Zone Video Outputs to TVs or monitors located in specific zones of the house. Please consult VIA!TOOLS or ELANTOOLS software for additional information about Component video routing.

Component Video Zone Outputs (Outputs A & B Shown)

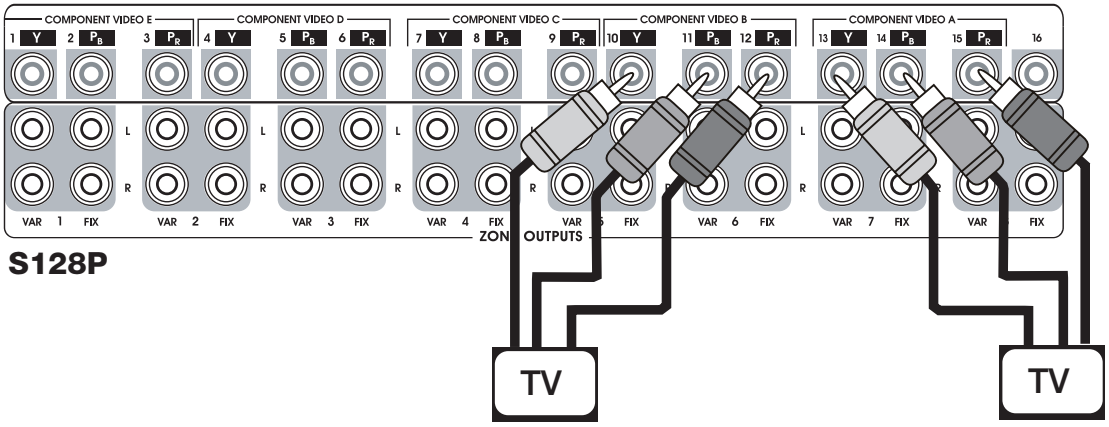


Figure 3-54: Component Video Zone Outputs

Video Zone Output Connections: Composite & Component

The S128P allows you to route both Composite video and Component video simultaneously. Connect the Video Zone Outputs as needed, making sure to maintain Group connections for Component video. Use VIA!TOOLS or ELANTOOLS setup software to assign outputs to specific zones as required by the system's architecture. See VIA!TOOLS or ELANTOOLS for detailed programming instructions.

Composite/Component Video Zone Outputs

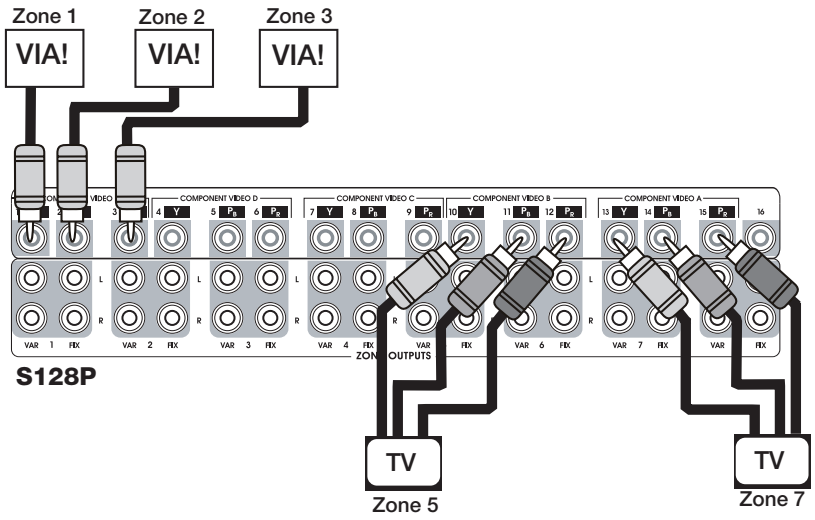


Figure 3-55: Composite and Component Video Connections

© ELAN Home Systems 2009 • All rights reserved.

Loop Output Connections

There is a corresponding Video Loop Output for each video input and because these are buffered outputs, there is no degradation of signal. Both Composite and Component video outputs can be looped. There are two primary applications for the Loop Outputs; sharing video sources with another system (such as a Home Theater), or multi-chassis S128P systems. The drawings below illustrate both examples.

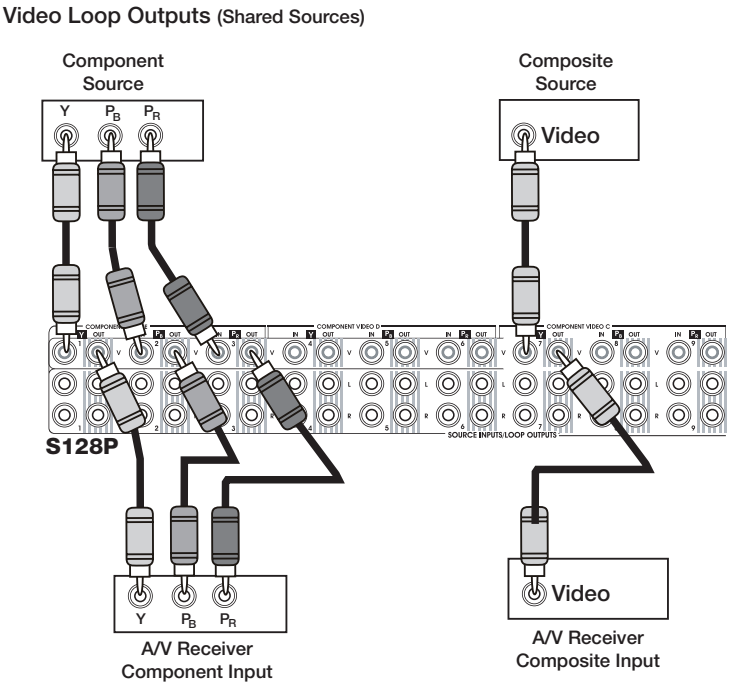


Figure 3-56: Video Loop Output Connections

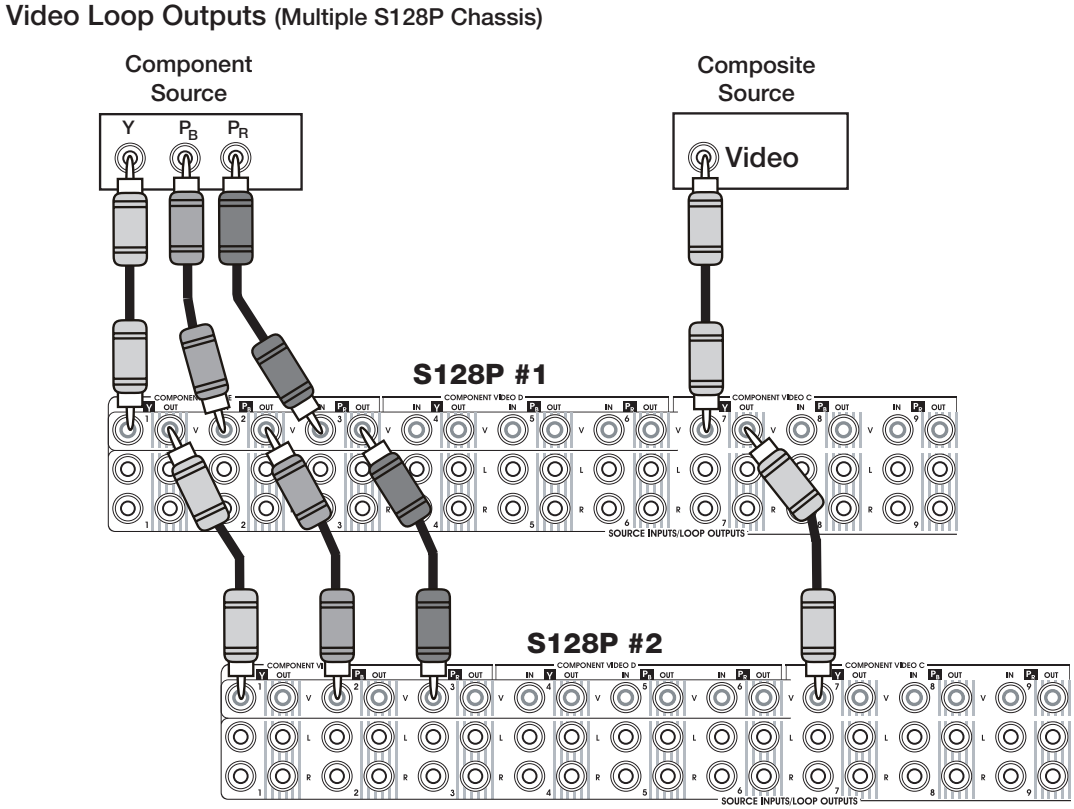


Figure 3-57: Video Loop Outputs Multiple S128P Chassis

© ELAN Home Systems 2009 • All rights reserved.

V8 Video Controller

In advanced systems that require additional composite video outputs to some of the S128P's zones, use an ELAN V8 Video Controller to switch up to eight sources to up to eight zones (or use up to three V8s to switch up to eight sources to up to twenty-four zones). Connect a composite video cable from each source's Video Loop Output to an input of the V8. Connect each output of the V8 to a TV, VIA! Touch Panel, or monitor located in a zone, (see ***Figure 3-58***). Use the ALL IR port on the S128P to control the V8 (see *All IR Out Port Connections*), or control it serially from VIA! Touch Panels or Olé Touch Pads using a SS1 System Station connected to the ELAN RS-232 Port (see *RS-232 Connections on page 55*).

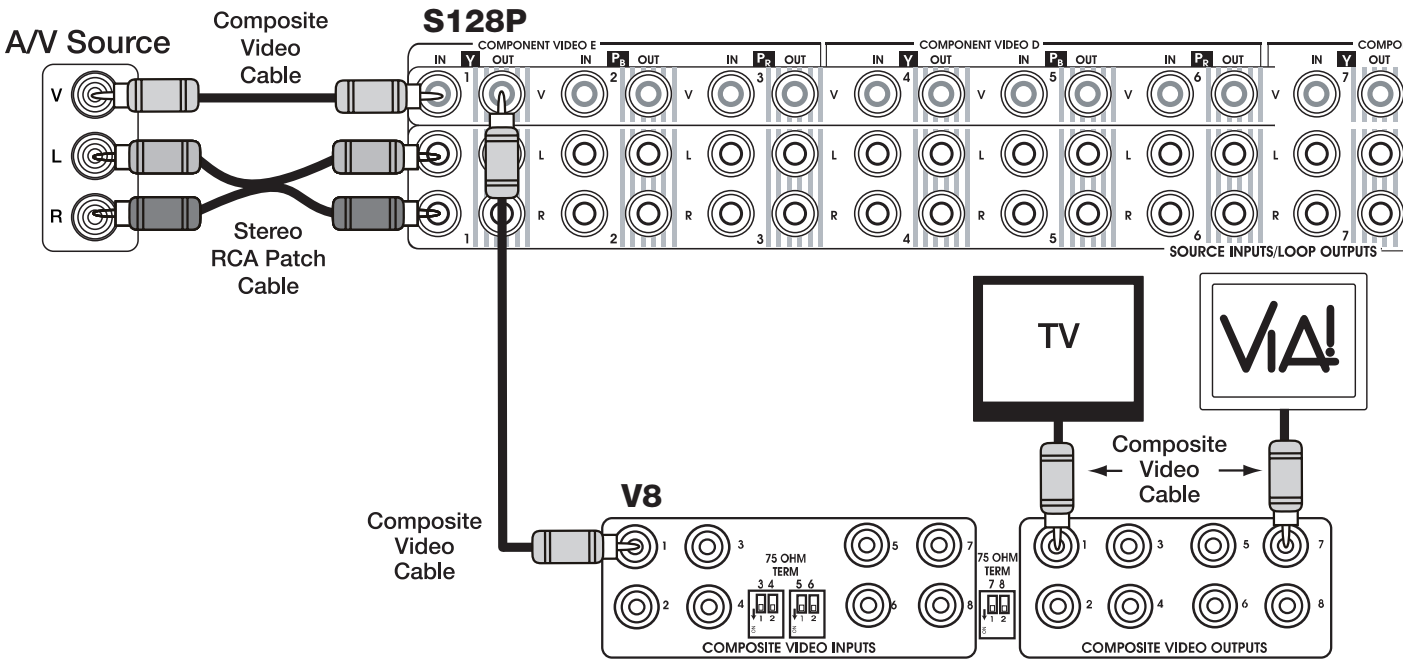
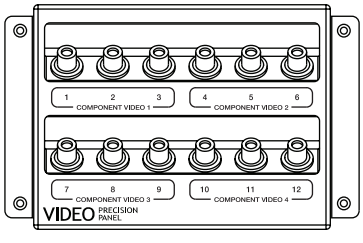


Figure 3-58: V8 Video Controller

Use PV12 Video Precision Panels for S128P Video Outputs to VIA! Touch Panels and TVs



© ELAN Home Systems 2009 • All rights reserved.

VIA!®QUAD 4-Channel Video Processor

The VIA!QUAD allows four video signals to be displayed simultaneously, sequentially, or independently. By connecting the output of the VIA!QUAD to a single video input of the S128P, up to four cameras can be connected while only using up one of the S128P's Source Inputs. The video sources/cameras that are connected in this way can then be switched and displayed on any TV, VIA! Touch Panel, or monitor that is connected to the system.

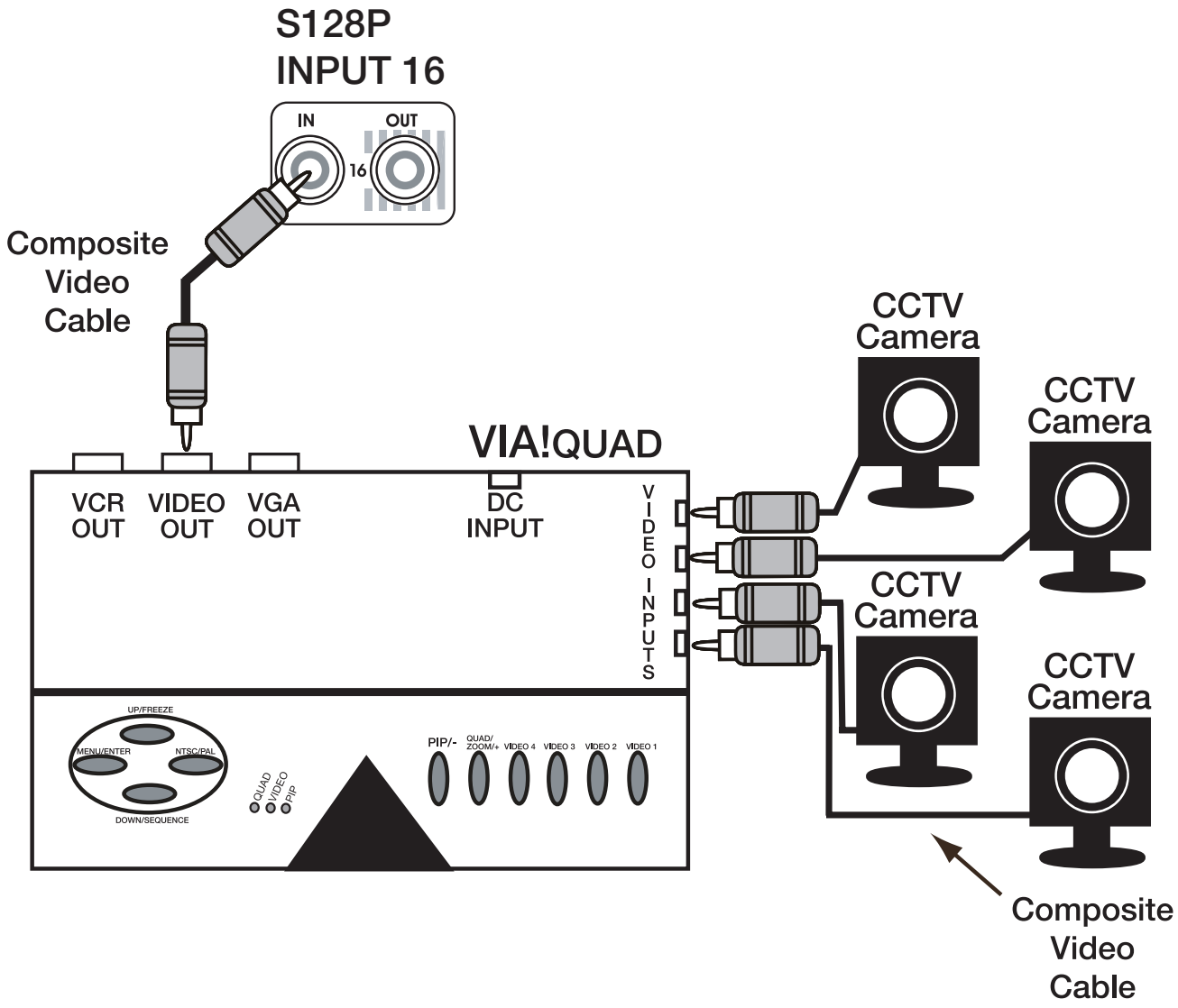


Figure 3-59: VIA!QUAD 4-Channel Video Processor

© ELAN Home Systems 2009 • All rights reserved.

Advanced Video Switching-Component Video

V85 Component Video Controller

Use an ELAN V85 (or multiple V85s) to switch component video. Up to 8 sources can be switched to up to 32 locations using multiple V85s. Connect RCA audio patch cables from a source to the S128P's Source Audio Inputs. Connect component video cables from the source to the V85's Component Video Inputs. Control using IR (see *All IR Out Port Connections*) or RS-232 (see *RS-232 Connections*) is possible.

NOTE: The S128P is used to switch composite video only in this application. Use ELAN's V85 Component Video Controller to switch component video.

NOTE: The V85 also has CAT5 Zone Out connections that are compatible with CVWP Receive Wall Plates and allow component video to be sent over CAT5 cables.

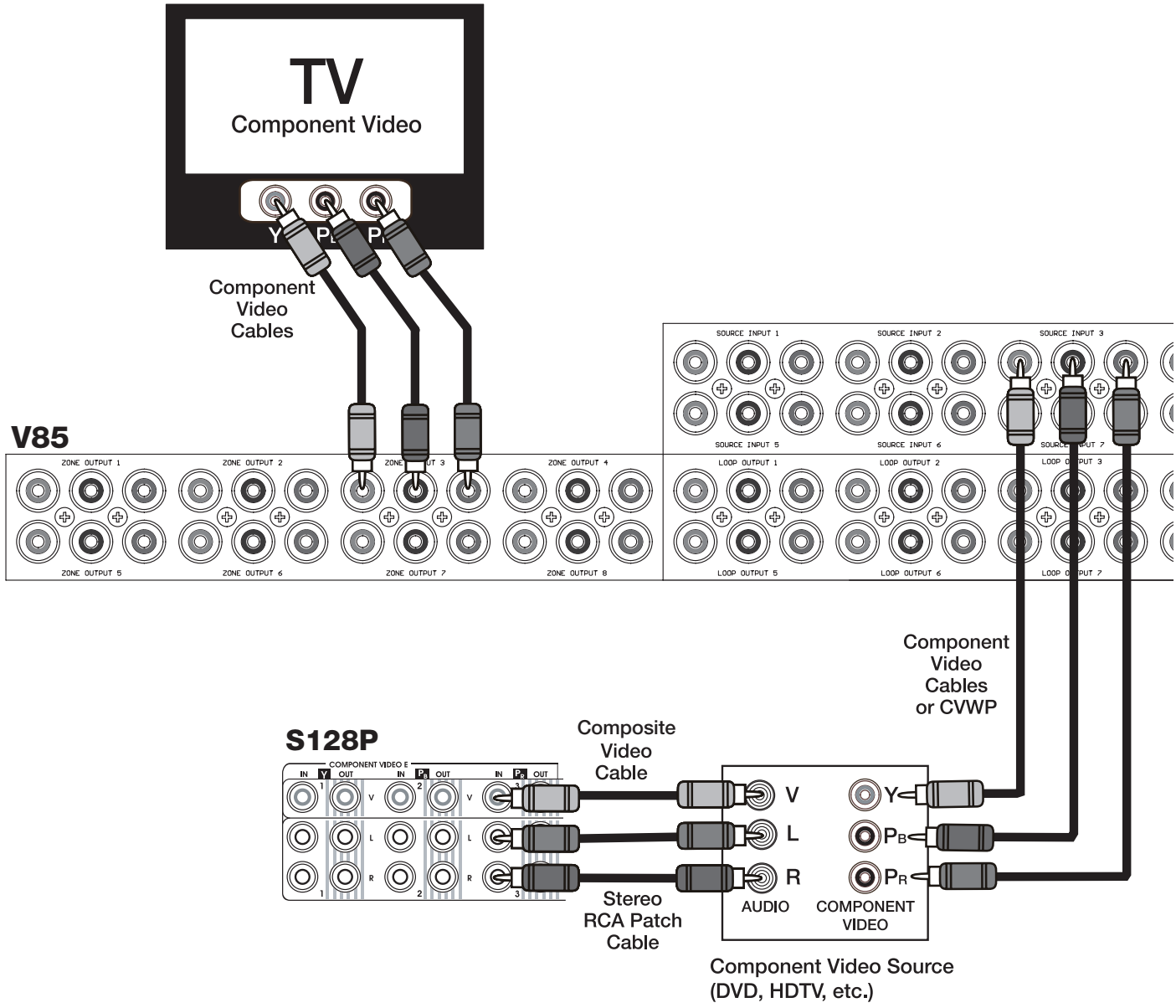


Figure 3-60: V85 Advanced Video Switching Connectiions

© ELAN Home Systems 2009 • All rights reserved.

System Expansion

An S128P system can be expanded from eight to thirty-two zones by adding additional units:

1 S128P = 8 zones
2 S128Ps = 16 zones
3 S128Ps = 24 zones
4 S128Ps = 32 zones

Sixty-four zones of video only are also available when linking four S128Ps. The number of distributed audio/video sources (twelve/sixteen) does not increase with the addition of multiple chassis. The number of local sources, however, increases by eight with each additional S128P.

Each S128P in the system will have its own UNIT ID, which designates the zones it is controlling:

UNIT 1: Zones 1-8
UNIT 2: Zones 9-16
UNIT 3: Zones 17-24
UNIT4: Zones 25-32

Unit ID dipswitches are found on the S128P's rear panel, and must be properly configured in order for a multi-chassis system to work correctly.

Note: Changes to the Unit ID Dip Switches become active when the S128P is reset to Factory Default. Each chassis must be reset in order for changes to take effect. See pg. 75 for Factory Default procedure.

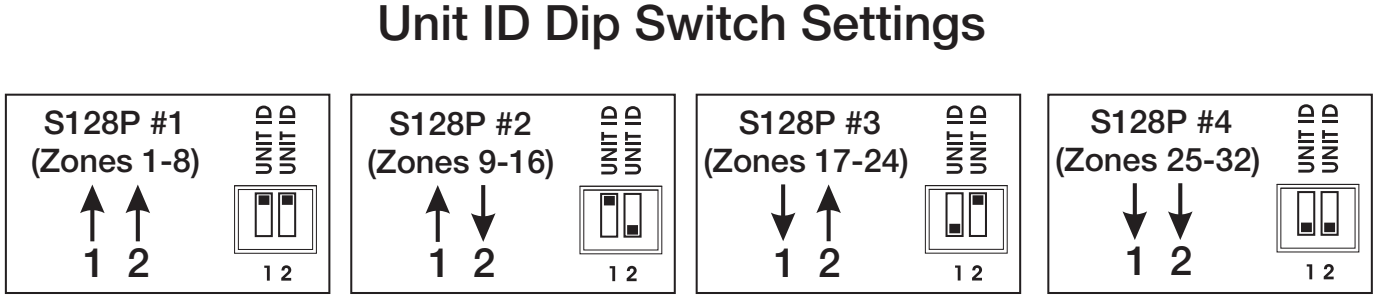


Figure 3-61: S128P Unit ID Switches

S128P Expansion Kit (S12XK)

Expanding an S128P system requires the use of the S128P Expansion Kit (Model S12XK). One S12XK is needed for each additional S128P in the system (maximum 3 S12XKs per system).

Each expansion kit includes:
(1) 15-pin male-to-female DSUB cable for the transmission of IR/RS-485 data between chassis
(1) 9-pin male-to-female DSUB cable for the transmission of RS-232 serial data between chassis
(1) 0.5M RCA-to-RCA interconnect cable for routing Page Audio between chassis
(1) 3.5mm mono interconnect cable for routing Page Trigger between chassis

Note: It is essential to use the S12XK Expansion Kit when connecting multiple S128Ps!

© ELAN Home Systems 2009 • All rights reserved.

Multi-Chassis Connections

IR/RS-485/RS-232

The S128P's Expansion Ports are used to transmit IR and RS-485 data between chassis. The S12XK's 15-pin DSUB cable is used for this purpose. The S128P's ELAN RS-232 Serial Ports are used to transmit serial data between chassis. These connections are necessary when downloading your VIA!TOOLS or ELANTOOLS file from your computer to the S128Ps, and also if the S128P is being serially controlled, i.e. with an ELAN SS1 System Station. Each S12XK expansion comes with a 9-pin DSUB cable for this purpose.

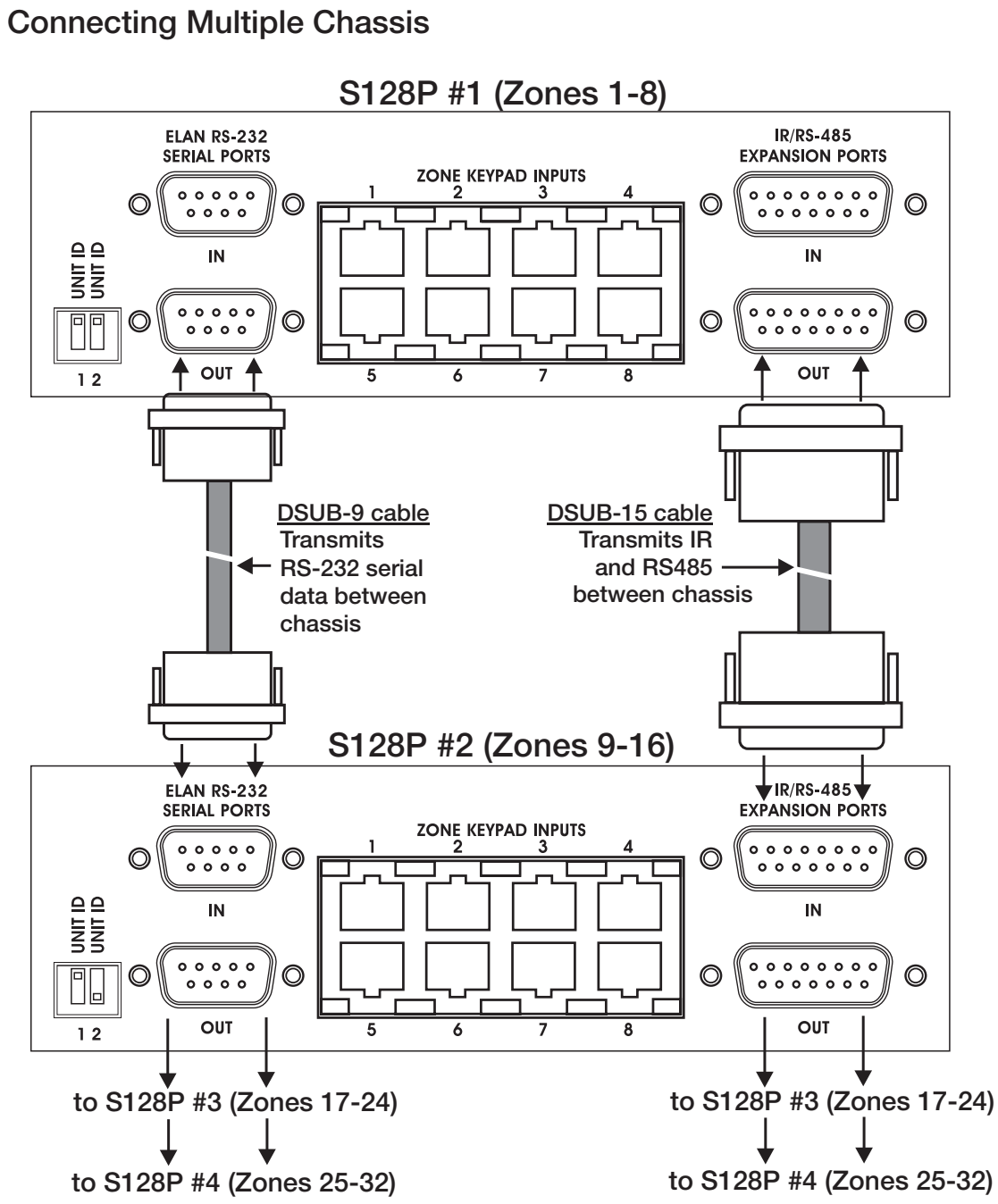


Figure 3-62: Multiple Chassis Connections

© ELAN Home Systems 2009 • All rights reserved.

Multi-Chassis C2 Communications Connections

The S128P Expansion Kit (S12XK) includes the stereo 3.5mm 'mini plug' interconnect cable needed to connect the Page Trigger Out to the Page Trigger In between S128P chassis. This connection must be made between all chassis in the system. The S12XK also includes the single RCA interconnect cable needed to route page audio between multiple S128P's. Connect this cable between the Page Out of S128P #1 to the Page In on S128P #2. Repeat for S128Ps 2, 3 and 4 if required.

Note: Do not link MOH connections.

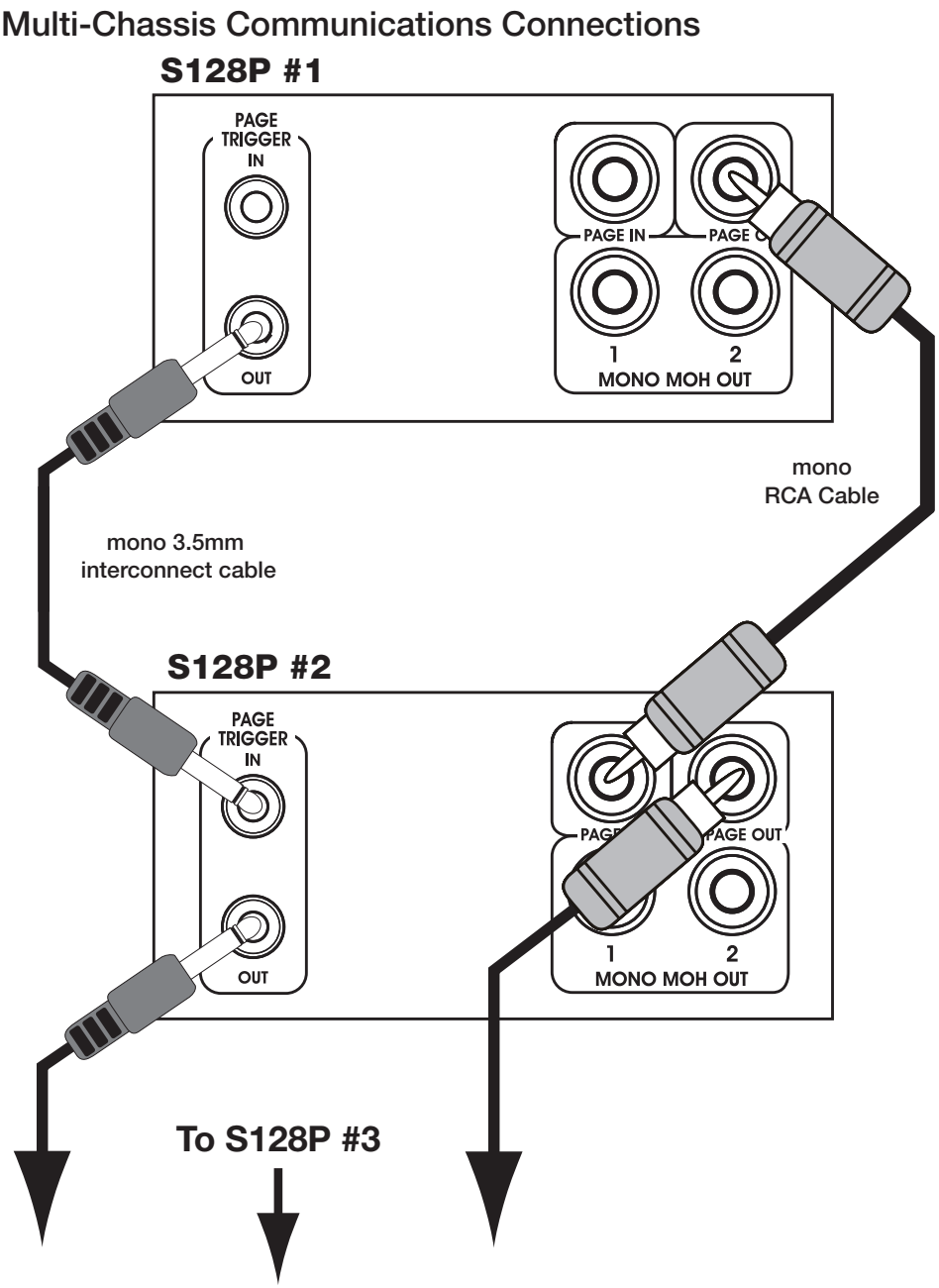


Figure 3-63: Multiple Chassis Communication Connections

© ELAN Home Systems 2009 • All rights reserved.

Audio/Video Connections

The Audio and Video Loop Outputs are used to route source audio and video between each S128P chassis. Each source connected to S128P Unit 1 must be routed to the corresponding source input on S128P Unit 2. This process must be repeated for each chassis. Since both the audio and video loop outputs are buffered, there will be no loss of signal between S128Ps. For video sources that output High- Definition Component signals, such as certain cable/ satellite receivers, HDDVD, and DVHS machines, only use cables that are HD-rated to loop these video signals between chassis. Use of Standard Definition video cables will result in a degradation of video quality.

Source Audio, Composite Video, & Component Video Connections
(Audio Source 1, Audio/Composite Source 2, and Component Video Source D Shown)

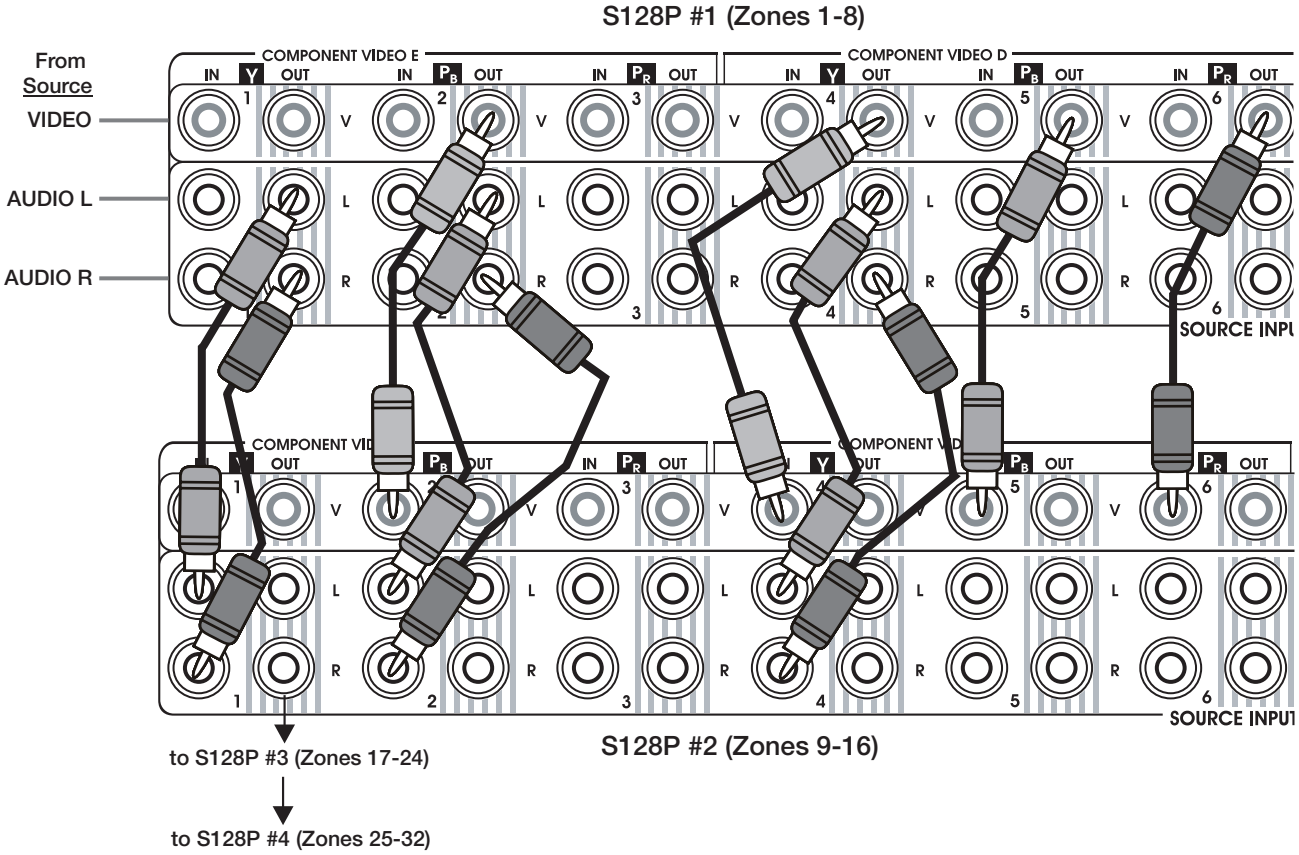


Figure 3-64: Multiple Chassis Audio Video Connections

© ELAN Home Systems 2009 • All rights reserved.

Chapter 4. Operations

Other than the Unit ID dipswitches that are used to identify each S128P in a multi-chassis system (see pg. 68) and ELAN keypad dipswitch settings (see below), all S128P programming is done with VIA!TOOLS or ELANTOOLS setup software - the same software that is used for programming VIA! Touch Panels and ELAN keypads. VIA!TOOLS or ELANTOOLS is required for S128P programming. VIA!TOOLS or ELANTOOLS software requires Windows XP or Vista operating systems on a PC with one standard RS-232 or USB port, 256 color 800 x 600 display, 16MB RAM (minimum) and approximately 10MB free disk space for associated files.

The S128P can be programmed prior to making all connections (recommended) or after making all connections. If programming prior to making connections, print out the source and zone setup screens from VIA!TOOLS or ELANTOOLS and use them as a guide for making your input and output connections. If programming after making all your connections, it is critical that you document the location of every source input and zone output, as this information will be needed for programming.

The specifics of VIA!TOOLS or ELANTOOLS programming is outside the scope of this manual, but complete step-by-step S128P programming tutorials are included with VIA!TOOLS or ELANTOOLS setup software.

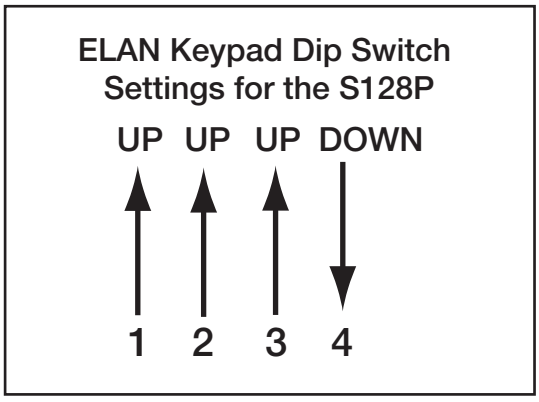
If there is more than one S128P in the system, it will be necessary to connect the ELAN RS-232 ports between chassis using the 9-pin serial cable that is included with the S128P Expansion Kit (see Multi- Chassis Connections, page 55, for details).

Each S128P in the system must be powered up prior to downloading. In multi-chassis systems, make sure the Unit ID dipswitches for each chassis are set correctly (see System Expansion, page 69, for details).

For detailed, step-by-step downloading instructions, see the VIA!TOOLS or ELANTOOLS Help files included with every version of VIA!TOOLS or ELANTOOLS.

ELAN Keypad Dipswitch Settings

When using an ELAN keypad with an S128P , the dipswitches (located on the front of each keypad) must be set to the following position:



Failure to set the keypad dipswitches as shown above will result in improper zone control and functionality. The settings shown above are the settings for all ELAN keypads in the system, regardless of what zone they are in. Like the S128P itself, each keypad in the system must receive a VIA!TOOLS or ELANTOOLS download in order for it to properly control a zone. Refer to the keypad instruction manual or VIA!TOOLS or ELANTOOLS Help for details on downloading to ELAN keypads.

© ELAN Home Systems 2009 • All rights reserved.

Chapter 5: Troubleshooting

Diagnostics Menu

The S128P features a Diagnostics Menu that is designed to provide easy access to S128P system status and current programming. All diagnostics information is displayed on the S128P's front panel. Menus exist for Firmware Version, Video Inputs and Outputs, Sense Inputs, Groups, and Factory Default. The pages within the Diagnostics Menu provide a map of the S128P's configuration and are invaluable when trouble-shooting. Firmware Version Screen To access the Diagnostics Menu, press and hold the DND button for 2.5 seconds. The first screen will appear and provide the Firmware revision.

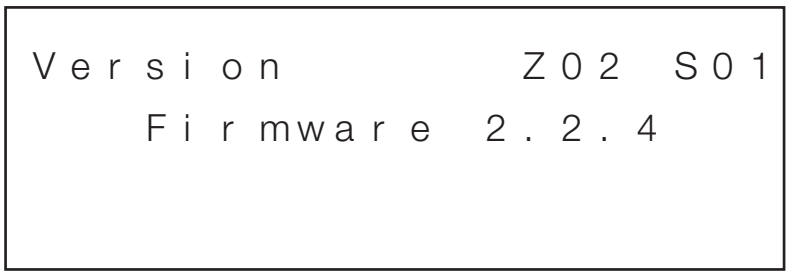


Figure 5-1: Firmware Version Screen

Video Screen

Press DND again to cycle to the **Video** screen which will display programmed video information. The example screen below shows that Output 1 is assigned to Input 1 The number on the left "01" designates the S128P video output. The number on the right "01" indicates the source currently selected. The "Screen Selected" indicates that screen 1 of 2 is shown for the first set of eight video outputs. Press the DND button again to cycle to the next screen of the final eight (9-16) video outputs.

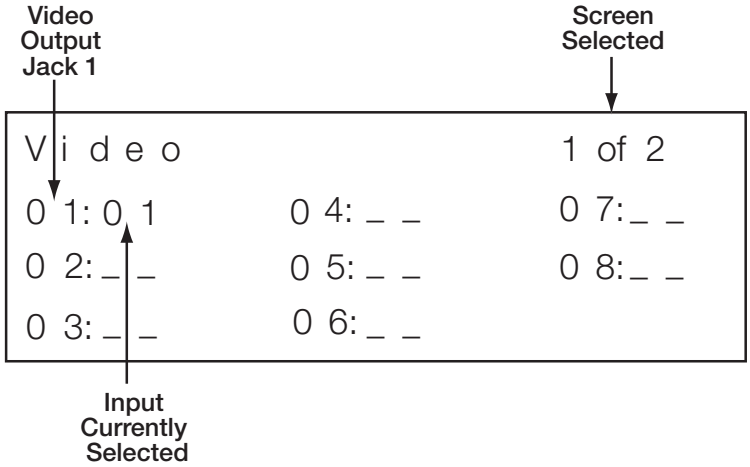


Figure 5-2: Video Diagnostic Screen

© ELAN Home Systems 2009 • All rights reserved.

Figure 5-3 shows Zone 1 with Source 3 selected and a camera selected. The touch panel (1) on Output 1 is displaying the camera connected to Input 16, while the monitor connected to Output 2 (5) is displaying Input 3. The * indicates that the output is not tracking with the audio source selected.

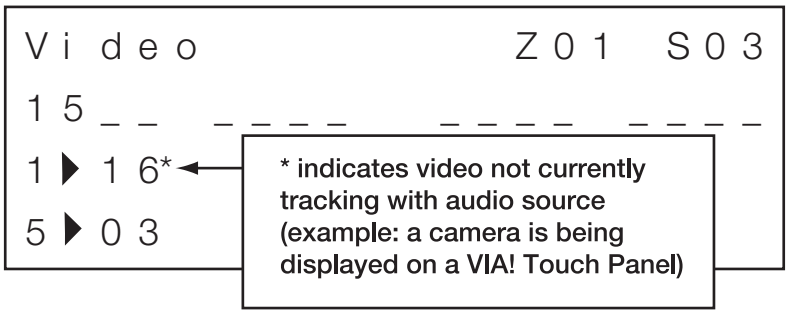

Video Z01 S03
15 _ _ _ _ _ _ _ _ _ _ _ _
1 ▶ 16*
5 ▶ 03
* indicates video not currently tracking with audio source (example: a camera is being displayed on a VIA! Touch Panel)

Figure 5-3: Video Not Tracking with Source

Note: This display is only valid for Default Tracking Mode and Source-Select Tracking Mode. It is invalid for 16 X 16 Mode.

Sense Screen

Press DND again to access the **Sense** screen. The 12 positions next to "A" correspond to audio sensing. Any source that is currently playing will be indicated in this location. "P" indicates a Paging signal (either Page Trigger or Page Audio). "L" indicates that a Local source's audio is present. "S" indicates Sense inputs that are active, while "V" represents video signals that are present.

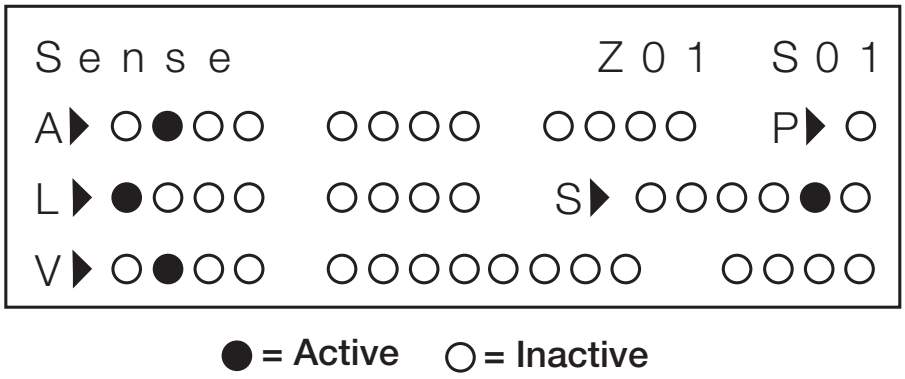


Figure 5-4: Sense Screen

Group Screen

Press DND again to cycle to the **Group** screen. This will show the zones that are in each of the four possible groups associated with the S128P chassis and whether the Group is currently linked. In the example below, Group 2 is active and contains Zones 2, 3, and 7. Group 4 is active and contains Zones 5, 6, and 8.

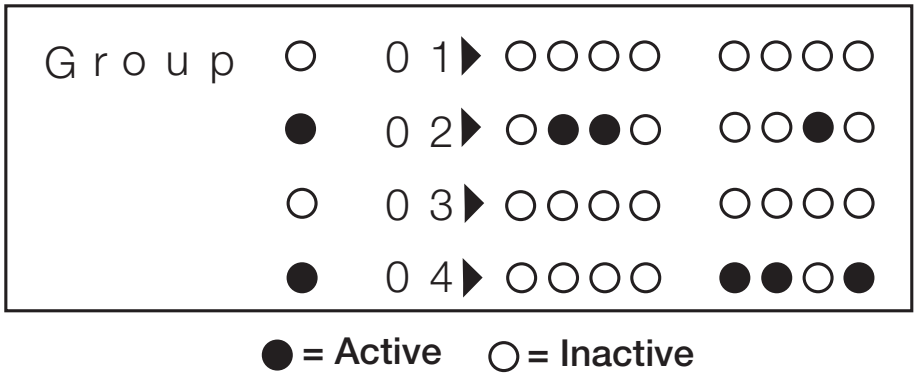


Figure 5-5: Group Screen

© ELAN Home Systems 2009 • All rights reserved.

ZNET Errors Detected Screen

Press DND again to cycle to the **ZNET Errors Detected** screen. This will show the ZNET Errors Detected screen, a counter that increments whenever the S128P receives data over the ZNET bus that is not a properly formatted ZNET command with a correct checksum. This usually occurs under one of three conditions:

1) When there are wiring problems on the ZNET bus
2) When electrical interference injects signals on the ZNET bus
3) When a ZNET device like a Z100/150 keypad fails in a way that causes it to emit electrical noise on the ZNET bus.

Under normal circumstances, it is not unusual to see the counter increment a few times in the course of wiring up or connecting controls to an S128P system. After the wiring is complete or control(s) connected, the counter should not be incrementing.

If the counter is incrementing frequently or constantly, there is an issue on the ZNET bus or with a ZNET control and the installer needs to troubleshoot until the issue is identified and resolved.

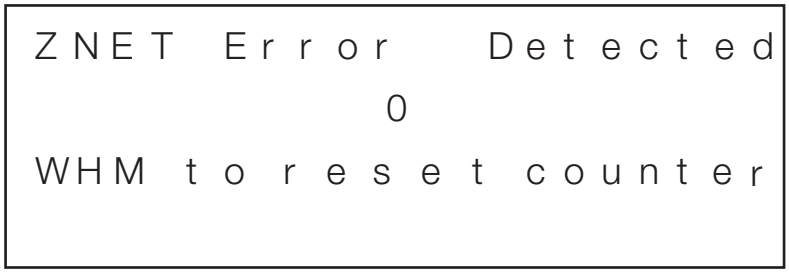


Figure 5-6: ZNET Errors Detected Screen

Factory Default

The last screen in the Diagnostics Menu is the **Factory Default** screen. Use this feature to reset the S128P back to original factory programming. With the Factory Default screen visible, press ZONE and VOL UP. The unit will reset itself and all programming will be removed.

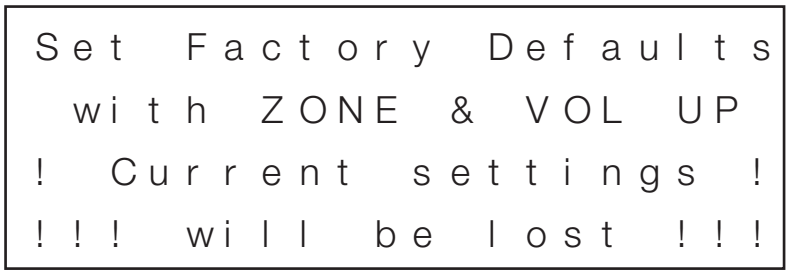


Figure 5-7: Factory Default Screen

© ELAN Home Systems 2009 • All rights reserved.

Table 5-1: Audio Troubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
No audio in a specific zone.	1. Source not playing.	Press Play, tune station, turn on etc.
	2. No source selected in zone.	Select source on front panel, keypad, or other zone controller.
	3. Source selected in wrong zone. IR zone controller (keypad etc.) connected to wrong zone	a. Consult front panel display to determine Zone selection. b. Connect IR keypad or touch panel to correct zone.
	4. Variable output's volume turned all the way down.	Increase volume.
	5. Speakers or volume controls miswired or defective.	Test known good speaker/volume control at amplifier.
	6. Zone audio output(s) connected to wrong amplifier input(s).	Verify connections.
No audio present in any zone.	1. See above.	Perform steps above.
	2. External amplifier powered down.	Turn amp ON. Ensure that any remote turn on cables are connected at both ends.
	3. External amp in protect mode.	Find cause of amp's protection mode and correct. Miswired speakers or volume controls most likely cause.
Audio "hum" or buzz through system speakers when audio playing.	1. Ground Loop	a. Ensure proper grounding using a three prong grounded AC outlet. b. Isolate problem by disconnecting each source one-by-one.
	2. Source Input level too high.	Reduce level settings in VIA!TOOLS or ELANTOOLS.
	3. Faulty/damaged cables.	Check source equipment cables for damaged cables and faulty connections.
	4. Faulty wiring.	a. Make sure any volume controls are not hooked up backwards. b. Check for shorts in wiring.

© ELAN Home Systems 2009 • All rights reserved.

Table 5-1: Audio Troubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
Poor Audio quality. Audio is unclear, Bass response is low.	1. Speakers out of phase.	Carefully check polarity of each speaker.
	2.Incorrect left/ right assignment of source or zone RCA cables.	Isolate to source or zone and correct.
	3. Source level programming too high/too low.	Increase/decrease source level (+9/- 6dB).
Audio plays at full volume in a variable zone. No volume control with IR zone controller (Keypad, etc.).	1. Fixed zone output connected to amp in variable zone.	Set DIP switches to Variable.
	2. Loop output connected instead of variable zone output	Connect Variable zone output to amplifier.
No audio from one or more channels	1. Loose/bad speaker cable connection	Check cable ends at binding posts and speaker terminals.
	2. Break/short in speaker cable.	Check continuity of each speaker cable using a multimeter. If short or open is indicated, check wiring for proper connections.
	3. Speaker is defective.	Swap with known good speaker.
	4. Source not sending audio.	Verify source is powered up and playing. Check any Tape Monitor settings on A/V Receiver.
Audio very distorted in areas using volume controls	Impedance-Match settings incorrect.	Correct Impedance-Match jumper settings on volume control(s)
	Incorrect Wiring	Reversed Wiring on Volume Control, correct wiring

© ELAN Home Systems 2009 • All rights reserved.

Table 5-1: Audio Troubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
Distorted audio at normal volume levels	1. Input level too high. 2. Defective/ incompatible speaker. 3. Volume control miswired.	Reduce level settings in VIA!TOOLS or ELANTOOLS. a. Check for physical damage to speaker. b. Ensure speakers have an appropriate power rating for amp. Check for proper input/output connections at volume control. Input comes from amplifier, output goes to speakers.
Hum in speakers when audio is not present.	Ground loop.	Plug all sources into same AC outlet. Test AC outlet using ground tester.

Table 5-2: VideoTroubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
No video to tv monitors or VIA! Touch Panels	1. Source not playing. 2. No source selected in zone. 3. Wiring; video inputs and/or outputs incorrectly connected. 4. Programming; video inputs and/or outputs incorrectly programmed.	Press Play, Tune station etc. Select source on front panel, keypad, or other zone controller. Verify and correct wiring. Verify and correct programming.
Video image is not optimal (ie., smeared, ghosted, blurry, or dull).	1. Wiring; inhouse coax runs picking up noise from high voltage lines etc. 2. Wiring; coax has sharp bends or poor quality wire. 3. Source output too high. Certain satellite receivers have especially high output	Do not run video cables near AC lines. Cross AC lines at 90 degrees. Make gradual bends in coax when running wire. Use high quality wire. Use an RCA 'Y' cable with a 75 Ohm terminator connected to one leg. This will reduce the source output strength.

.

© ELAN Home Systems 2009 • All rights reserved.

Table 5-3: Triggers Troubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
Sense Trigger Inputs: Triggered event fails to occur. Example: VIA! Touch Panel does not switch to Camera Mode.	1. Wiring; Sense Inputs incorrectly connected or incorrect type of Sensor/ faulty Sensor. 2. Programming; Sense Inputs incorrectly programmed in VIA!TOOLS or ELANTOOLS	a. Connect a 3.5 mm mono mini cable to Sense Input. This simulates a contact closure and should trigger the event. b. Replace Sensor or use different type Verify and correct programming. See VIA!TOOLS or ELANTOOLS Help file.
Zone/System Trigger Outputs: Triggered event fails to occur. Example: Amplifier does not turn ON when zone becomes active.	1. Wiring; bad mini-cable or using 3.5 mm stereo cable instead of mono. 2. Test for voltage w/ Digital Multi-Meter. 3. Programming	a. Must use MONO mini cable. b. Replace defective cable. Correct reading is +12 VDC. Correct programming in VIA!TOOLS or ELANTOOLS.
Page Trigger Inputs/Outputs: Triggered event fails to occur. Example: Volume Control Override does not function.	Wiring: incorrect connections between C2 and S128P/SPP.	a. See 'Communications' b. See Diagnostics Menu c. Test for Voltage w/ digital multi-meter Correct reading is 12VDC

Table 5-4: RS-232 Troubleshooting Procedure

Symptom	Possible Cause/s	What an authorized installer can do
No source selection from VIA! Touch Panel.	1. Programming: missing or incorrect source select command. 2. Wiring: RS-232 signal not reaching ELAN RS-232 port.	Verify and correct programming. Verify wiring: SC-1 or SS1 ELAN RS-232 to S128P ELAN RS-232.
Source selected in wrong zone.	Programming: incorrect source and/or zone select commands.	Verify and correct programming.
No RS-232 source control.	1. Programming: missing or incorrect source control commands. 2. Wiring: incorrect pin-out or serial port assignment.	Verify and correct wiring and/or port assignment.

© ELAN Home Systems 2009 • All rights reserved.

Table 5-5: Communications Troubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
No Music-On-Hold	1. Source #1 is not playing. 2. The MOH input level on the C2 is turned down.	Press Play, tune station, turn ON, etc.Adjust levels. Consult the C2 manual.
No Page or Door Chime audio. Music does not mute when page or doorbell is activated.	1. Zone is in Do-Not-Disturb. 2. Page/DB output from C2 is not connected to Page/DB input on S128P. 3. Page/DB trigger wiring incorrect between the S128P and the C2. 4. Programming	De-activate Do-Not-Disturb using IR or RS-232 commands. Correctly connect Page/DB Output from C2 to Page/DB Input on S128P. See C2 Connections Correct wiring error. See C2 Connections and the C2 manual. Check VIA!TOOLS or ELANTOOLS for the Disable checkbox.
No Page or Door Chime audio. Music mutes when page or doorbell is activated.	1. C2 Page/DB Output level turned all the way down. 2. Page/DB output from C2 not plugged into Page/DB input on S128P. 3. S128P has Volume set too low.	Increase Page/DB level adjustment on C2. See Above. Increase setting on S128P, check VIA!TOOLS or ELANTOOLS program for volume setting.

Technical Support

If, after carefully following the steps in the **Troubleshooting** section, you are unable to resolve issues with the installation or operation of the S128P, please call ELAN Technical Support at 1-800-622-ELAN (3526).

© ELAN Home Systems 2009 • All rights reserved.

Table 5-5: IR Troubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
No Source selection from IR Zone controller (Keypad, VIA! Touch Panel, or hand-held remote).	1. Programming: missing or incorrect source select command. 2. Wiring: IR signal not reaching zone input.	Verify and correct programming. Verify wiring: Wh/Blue(IR) & Brown (G).
Source selected in wrong zone.	IR zone controller connected to wrong zone.	Connect to correct zone input.
No source control from sourcespecific IR port. Works from 'ALL' port.	Programming: missing or incorrect source select command.	Verify and correct programming.
No source control whatsoever. Source selection is OK.	1. Programming: missing or incorrect source control commands. 2. Wiring: IR emitter connected to wrong port. 3. IR emitter defective.	Verify and correct programming. Test IR commands from VIA!TOOLS or ELANTOOLS. Correct connection of IR emitter. Replace IR emitter.
Intermittant source control.	IR flooding.	Check IR indicator LED on front panel. If it flickers, or is constantly lit, IR flooding is indicated. Check any IR receivers that may be receiving ambiant light or plasma TV noise.

Table 5-6 Multi-Chassis Troubleshooting Procedures

Symptom	Possible Cause/s	What an authorized installer can do
In Chassis #2-4 only; •WHM, Paging, Doorbell, System Off do not function •Sense information not correct •IR information does not reach source equipment •Incorrect system On/ Off status	IR/RS-485 Expansion ports not connected or incorrectly connected.	Connect Expansion Port OUT of Chassis #1 to Expansion Port IN of Chassis 2, etc. using ELAN's S12XK Expansion Kit.
In Chassis #2-4 only; •No RS-232 control of S128P •No RS-232 control of sources	RS-232 Serial ports not connected or incorrectly connected.	Connect RS-232 Serial Port OUT of Chassis #1 to RS-232 Serial Port IN of Chassis 2, etc. using ELAN's S12XK Expansion Kit.

© ELAN Home Systems 2009 • All rights reserved.

Appendix A Specifications

Table A-1 shows the equipment specifications for the S128P Multi-Room Controller.

Table A-1 S128P Multi-Room Controller Specifications

Item	Description
System	Multi-Source/Multi-Zone Controller
Source Inputs Input Sensitivity Input Impedance	 0-2V RMS 47K Ohms
Pre-Amplifier Output Volume Adjustment Range Frequency Response THD+Noise(@1KHz) Signal-to-Noise (A Weighted) Crosstalk (Zone to Zone) Output Impedance	 -70dB to +6dB 20Hz to 20kHz, +/-0.5dB < 0.02% >83dB >70dB 600 Ohms
Music On Hold Output Output Impedance Max Output Level:	 600 Ohms +6dB
Page & Doorbell Input Input Sensitivity Input Impedance	 0-2V RMS 47k Ohms
Video Gain Bandwidth (-3dB) Gain Flatness (0.1dB) Input Impedance Output Impedance Crosstalk	 Unity 125MHz 40MHz 75 Ohms 75 Ohms >64dB@5MHz

© ELAN Home Systems 2009 • All rights reserved.

Table A-1 S128P Multi-Room Controller Specifications

Item	Description
Connector Interfaces	
AC Power	3-Prong Heavy Duty Cord
VIA!/Keypad Inputs (8)	RJ-45
RS-232 IN/OUT	DB9 Connection
Source IR Expansion IN/OUT	15-Pin Connection
Zone A/V Pre-Amp Outputs (8	RCA Type, Line Level Only
Local Source Inputs (8)	RJ-45
Music On-Hold (MOH OUT)	RCA Type, Line Level Only
Page In/Out (PG IN/OUT)	RCA Type, Line Level Only
Source Loop Audio/Video (Composite) Outputs (12)	RCA Type, Line Level Only
Source Audio/Video (Composite) Inputs (12)	RCA Type, Line Level Only
Component Video Inputs (13)	RCA Type, Line Level Only
Camera Video (composite) Inputs (1)	RCA Type, Line Level Only
Page Trigger In/Out	3.5mm Connectors (stereo)
System Trigger Out	3.5mm Connectors (mono)
ELAN Sense Inputs (6)	3.5mm Connectors (stereo)
Programmable Trigger Outputs (6)	3.5mm Connectors (mono)
Source IR Outputs (8)	3.5mm Connectors (mono
General	
Trigger Outputs	+12VDC @ 100mA each
Keypad Power	300mA @ 12VDC per zone
Power Requirements	120VAC 50/60Hz (S128P240) 230~240VAC 50/60Hz
Power Consumption	125W
Dimensions w/ Feet (4U w/o Feet)	17 W x 7 5/8 H x 17 D (in) 432 W x 194 H x 432 D (mm)
Weight	33 lbs/14.9 kgs

© ELAN Home Systems 2009 • All rights reserved.

Appendix B: Programming

Downloading VIA!TOOLS or ELANTOOLS Programs to the S128P.

Once you have completed programming, it will be necessary to download the VIA!TOOLS or ELANTOOLS client file to the S128P. For downloading, the 9-pin serial cable that is included with your VIA!TOOLS or ELANTOOLS package should be connected between the computer's serial port and the ELAN RS-232 Serial Port IN on the S128P.

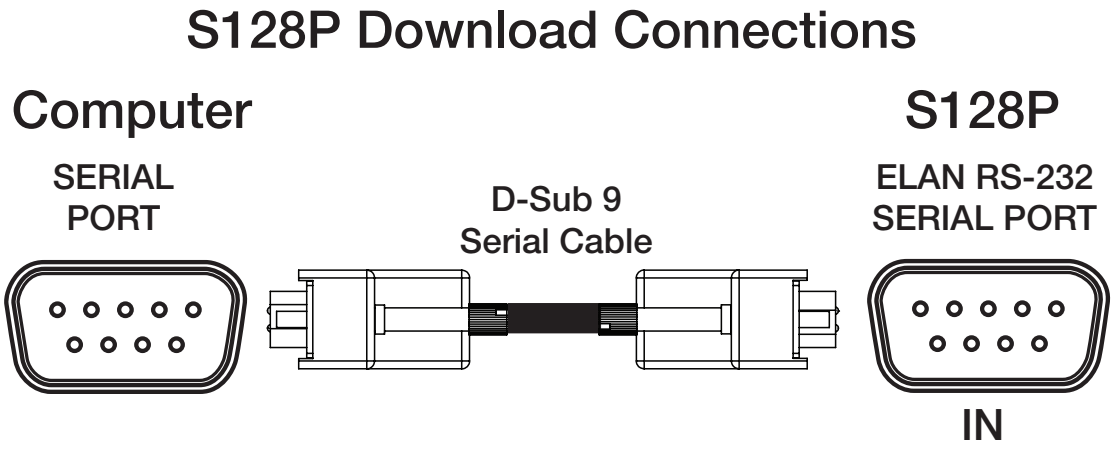


Figure 4-1: S128P Download Connections

Note: If your computer has a USB port, but not a serial port, a USB-to-Serial Port adaptor, or a serial I/O PC card will be required for programming the S128P.

IR Commands

The following list contains the IR commands for the S128P. These commands are included in the IR Library of VIA!TOOLS or ELANTOOLS. Please refer to VIA!TOOLS or ELANTOOLS Help for specific information about these There are three types of commands:

- System Commands
- Video Commands
- External IR Commands

System Commands

SYS OFF
- Turns all 8 zones off.
- If multiple chassis are used ENSURE the expansion cable is connected and send this command to the first chassis.

ZONE OFF
- Turns a single zone off.

ZONE ON
- Turns a single zone on.
- Turns the zone on to the last selected source.

ZONE TOG
- Toggles a zone from off to on to off.

© ELAN Home Systems 2009 • All rights reserved.

DND OFF
- Disables Do Not Disturb in a zone.
- Works if the zone is off or on.

DND ON
- Enables Do Not Disturb zone.
- Works if the zone is off or on.

DND TOG
- Toggles a zone's Do Not Disturb from off to on to off.
- Works if the zone is off or on.

WHM OFF
- Disables Whole House Music in a zone.
- If any zone in the group is turned off, WHM is disabled.
- Has no effect if the zone is off.

WHM ON
- Enables Whole House Music zone.
- Has no effect if the zone is off.

WHM TOG
- Toggles a zone's Whole House Music from off to on to off.
- If any zone in the group is turned off, WHM is disabled.
- Has no effect if the zone is off.

MUTE OFF
- Disables Mute in a zone.
- Has no effect if the zone is off.

MUTE ON
- Enables zone Mute.
- Has no effect if the zone is off.

MUTE TOG
- Toggles a zone's Mute from off to on to off.
- Has no effect if the zone is off.

DRC OFF
- Disables Dynamic Range Compression in a zone.
- Has no effect if the zone is off.

DRC ON
- Enables Dynamic Range Compression in a zone.
- Has no effect if the zone is off.

DRC TOG
- Toggles a zone's Dynamic Range Compression from off to on to off.
- Has no effect if the zone is off.

EQ FLAT
- Sets the Treble and Bass to zero in a zone.

TREB DOWN
- Decreases the treble in a zone.
- Has no effect if the zone is off.

TREB UP
- Increases the treble in a zone.
- Has no effect if the zone is off.

BASS DOWN
- Decreases the bass in a zone.
- Has no effect if the zone is off.

© ELAN Home Systems 2009 • All rights reserved.

BASS UP
• Increases the bass in a zone.
• Has no effect if the zone is off.

VOLUME DOWN
• Decreases the volume in a zone.
• Has no effect if the zone is off.

VOLUME UP
• Increases the volume in a zone.
• Has no effect if the zone is off.

GROUPS

• Has no effect if the zone is off.
• When group is turned OFF, all zones remain on.

GRP 1/5/9/13 OFF
• Disables Groups 1, 5, 9 or 13.

GRP 2/6/10/14 OFF
• Disables Groups 2, 6, 10 or 14.

GRP 3/7/11/15 OFF
• Disables Groups 3, 7, 11 or 15.

GRP 4/8/12/16 OFF
• Disables Groups 4, 8, 12 or 16.

GRP 1/5/9/13 ON
• Enables Groups 1, 5, 9 or 13.

GRP 2/6/10/14 ON
• Enables Groups 2, 6, 10 or 14.

GRP 3/7/11/15 ON
• Enables Groups 3, 7, 11 or 15.

GRP 4/8/12/16 ON
• Enables Groups 4, 8, 12 or 16.

SOURCE 1 thru Source Local
• Selects their respective source in a zone.

PAGE OFF
• Disables Page in a zone.

PAGE ON
• Enables Page in a zone.

PAGE TOG
• Toggles a zone's Page from off to on to off.

DB OFF
• Disables Doorbell in a zone.

DB ON
• Enables Doorbell in a zone.

DB TOG
• Toggles a zone's Doorbell from off to on to off.

PAGE VOL DOWN
• Decreases the Page volume in a zone.
• Works if zone is on or off.

© ELAN Home Systems 2009 • All rights reserved.

PAGE VOL UP
• Increases the Page volume in a zone.
• Works if zone is on or off.

DB VOL DOWN
• Decreases the Doorbell volume in a zone.
• Works if zone is on or off.

DB VOL UP
• Increases the Doorbell volume in a zone.
• Works if zone is on or off.

Video Commands

VIDEO1-1
• The S128P Routes Input 1 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-2
• The S128P Routes Input 2 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-3
• The S128P Routes Input 3 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-4
• The S128P Routes Input 4 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-5
• The S128P Routes Input 5 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-6
• The S128P Routes Input 6 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-7
• The S128P Routes Input 7 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-8
• The S128P Routes Input 8 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-9
• The S128P Routes Input 9 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-10
• The S128P Routes Input 10 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-11
• The S128P Routes Input 11 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-12
• The S128P Routes Input 12 to Panel 1 in Zone.
• Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

© ELAN Home Systems 2009 • All rights reserved.

VIDEO1-13
- The S128P Routes Input 13 to Panel 1 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-14
- The S128P Routes Input 14 to Panel 1 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-15
- The S128P Routes Input 15 to Panel 1 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-16
- The S128P Routes Input 16 to Panel 1 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO1-TRACK
- The S128P Routes the selected audio source's video to the Panel.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO2
- Same as VIDEO1 except the S128P routes to Panel 2 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO3
- Same as VIDEO1 except the S128P routes to Panel 3 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO4
- Same as VIDEO1 except the S128P routes to Panel 4 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

VIDEO5
- Same as VIDEO1 except the S128P routes to Panel 5 in Zone.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

COMPONENT A
- The S128P Routes Inputs 13, 14, 15 to the Component Device.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

COMPONENT B
- The S128P Routes Inputs 10, 11, 12 to the Component Device.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

COMPONENT C
- The S128P Routes Inputs 7, 8, 9 to the Component Device.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

COMPONENT D
- The S128P Routes Inputs 4, 5, 6 to the Component Device.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

COMPONENT E
- The S128P Routes Inputs 1, 2, 3 to the Component Device.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

COMPONENT TRACK
- The S128P Routes the selected audio source's Component video to the Component Device.
- Used with Default Tracking mode, Source-Select Tracking Mode, Un-Tracking Mode.

© ELAN Home Systems 2009 • All rights reserved.

Video Commands for 16 X 16 Mode

16 X 16 VID OUT 01 thru 16 X 16 VID OUT 16
and
16 X 16 VID IN 03 thru 16 X 16 VID IN 04

- Must use VID OUT and VID IN together.
- The S128P routes a specified Input to a specified Output.
- The commands must be sent Output first and then Input.
- Works if the S128P is off or on.

16 X 16 CPN OUT A thru 16 X 16 CPN OUT E
and
16 X 16 CPN IN A thru 16 X 16 CPN IN E

- Must use CPN OUT and CPN IN together.
- The S128P routes a specified inputs to specified outputs.
- The commands must be sent output first and then input.
- Works if the S128P is off or on.

External IR

EXTIR OFF 1
- Turns Source IR Emitter Output Port 1 OFF.

EXTIR OFF 2 thru EXTIR OFF 12
- Same as EXTIR OFF 1 except they turn OFF their respective ports.

EXTIR ALLOFF
- Turns ALL Source IR Emitter Outputs OFF.

EXTIR ON 1 thru EXTIR ON 12
- Same as EXTIR OFF 1 except they turn ON their respective ports.

EXTIR ALLON
- Turns ALL Source IR Emitter Outputs ON.

© ELAN Home Systems 2009 • All rights reserved.

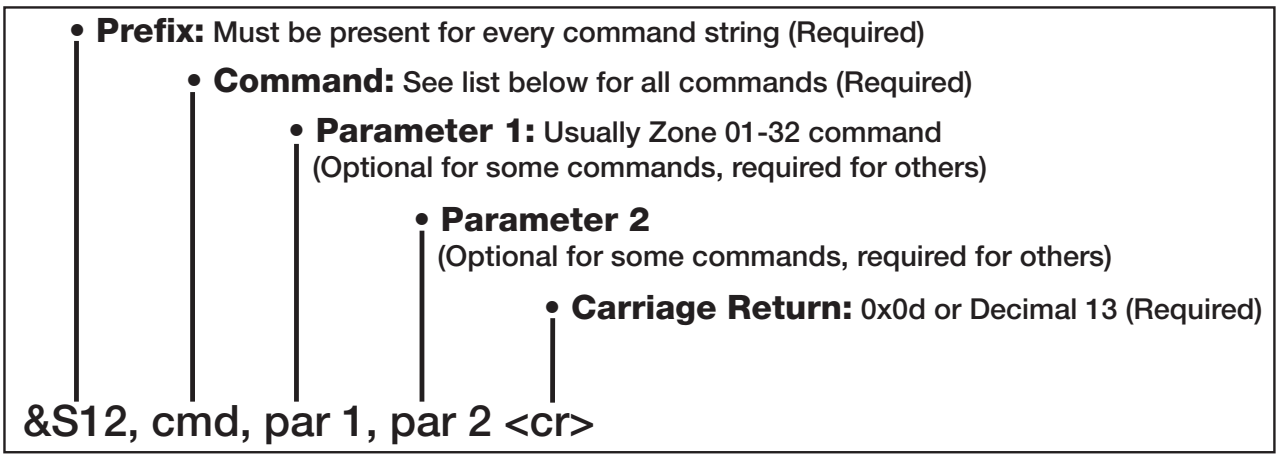
Appendix C: RS-232 Serial Control Commands

General Information

The S128P serial interface is a 3-wire RS-232 (Rx, Tx, Ground-Pins 2, 3, and 5 respectively).

S128P Communication Port Settings	
Baud Rate	19200
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

Command Structure


• Prefix: Must be present for every command string (Required)
• Command: See list below for all commands (Required)
• Parameter 1: Usually Zone 01-32 command
(Optional for some commands, required for others)
• Parameter 2
(Optional for some commands, required for others)
• Carriage Return: 0x0d or Decimal 13 (Required)
&S12, cmd, par 1, par 2 <cr>

&S12,ACK

&S12,ACK<cr> is a command that is transmitted by the S128P whenever it receives a command with the correct structure. It does not mean that the command was performed. To ensure that the command was performed correctly, the S128P needs to be queried.

The following are correct serial command structures:

- &S12,SYSOFF
- &S12,PWR,01,1

If &S12,SYSOFF command is transmitted to the S128P, the S128P will respond with &S12,ACK. If &S12,PWR,100,1 is transmitted to the S128P, the S128P will NOT respond with a &S12,ACK because 100 is out of the scope. That field
supports Zones 01-32 for this particular command.

If there is only one S128P in the System, Zones 1-8, and &S12,PWR,09,1 is transmitted to the S128P, the S128P will NOT respond with a &S12,ACK because Chassis 1 does not support Zone 09. Chassis 1 supports Zones 01-08 for this particular command.

If an &S12,ACK is not received within 200ms:

- the command was formatted incorrectly
- an error has occurred in the S128P
- serial cable not connected or defective
- S128P does not have power

The S128P requires at least 50ms between each serial command transmitted to it. However, if the &S12,ACK is received prior to 50ms, another command can be transmitted immediately.

© ELAN Home Systems 2009 • All rights reserved.

RS-232 Commands

The following list contains the RS-232 commands for the S128P. These commands are included in the IR Library of the latest versions of VIA!TOOLS or ELANTOOLS. Please refer to the VIA!TOOLS or ELANTOOLS Help file for specific information about these commands and how to use them.

There are three types of commands:

- System Commands
- Video Commands
- External IR Commands

System Commands

BAS (Bass)

Description:
- Sets Zone zz to bass xyz.
- Increment Zone zz bass.
- Decrement Zone zz bass.
- Has no effect if zone is off.
- If sending 00, the + or - can be omitted.

Command:
&S12,BAS,zz,a<cr>
&S12,BAS,zz,xyz<cr>

Query:
&S12,BAS,zz?<cr>

Reply:
&S12,BAS,zz,xyz<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: + = Increments (plus symbol)
- = Decrements (minus symbol)

x: + Sets to positive number (plus symbol)
- Sets to negative number (minus symbol)

yz: 00 - 18
00 = Flat

Examples:
- &S12,BAS,+13,+<cr> Increments Zone 13's bass.
- &S12,BAS,02?<cr> queries Zone 2 for its bass.
- &S12,BAS,13,-03<cr> sets Zone 13's bass to -3.
- &S12,BAS,13,00<cr> Zone 13 bass is flat

© ELAN Home Systems 2009 • All rights reserved.

CPN (Component)

Description:
Switches S128P's Component in Zone zz to a specific Video Component Group a.

Command:
&S12,CPN,zz,a<cr>

Query:
&S12,CPN,zz?<cr>

Reply:
&S12,CPN,zz,a<cr>

Parameters:
<cr>: Carriage Return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: Component group 1-5
0 = Track

Examples:

- &S12,CPN,03,2<cr> S128P's Component in Zone 3 selects Component Group 2.
- &S12,CPN,29?<cr> Queries S128P's Component in Zone 29 for selected Component Group.
- &S12,CPN,07,5<cr> S128P's Component in Zone 7 selects Component Group 5.
- &S12,CPN,02,0<cr> Notifies S128P to place S128P's Component in Zone 2 in Tracking Mode.

DND (Do Not Disturb)

Description:
- Turns specified Zone zz's DND off/on/toggle.
- Works if zone is off or on.

Command:
&S12,DND,zz,a<cr>

Query:
&S12,DND,zz?<cr>

Reply:
&S12,DND,zz,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: 0 = OFF
1 = ON
2 = TOG

Examples:
- &S12,DND,13,0<cr> turns Zone 13's DND off.
- &S12,DND,02?<cr> queries Zone 2's DND.
- &S12,DND,13,1<cr> turns Zone 13's DND on.
- &S12,DND,13,2<cr> toggles Zone 13's DND from on to off or off to on.

© ELAN Home Systems 2009 • All rights reserved.

DRC (Dynamic Range Compression)

Description:
• Turns specified Zone zz's DRC off/on/toggle.
• Has no effect if the zone is off.

Command:
&S12,DRC,zz,a<cr>

Query:
&S12,DRC,zz?<cr>

Reply:
&S12,DRC,zz,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: 0 = OFF
1 = ON
2 = TOG

Examples:
• &S12,DRC,13,0<cr> turns Zone 13's DRC off.
• &S12,DRC,02?<cr> queries Zone 2's DRC.
• &S12,DRC,13,1<cr> turns Zone 13's DRC on.
• &S12,DRC,13,2<cr> toggles Zone 13's DRC from on to off or off to on.

DB

Description:
• Turns specified DB off/on/toggle. This will initiate a DB that will route audio present at the S128P's Page In audio jack to zones that have DB enabled.
• Works if the System/Zone is on or off.
• Only chassis one will respond.

Command:
&S12,DB,a<cr>

Query:
&S12,DB?<cr>

Reply:
&S12,DB,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

a: 0 = OFF
1 = ON
2 = Toggle

Examples:
• &S12,DB,0<cr> turns Doorbell off.
• &S12,DB?<cr> queries Doorbell status.
• &S12,DB,2<cr> toggles Doorbell from on to off or off to on.

© ELAN Home Systems 2009 • All rights reserved.

GRP (Group)

Description:
• Turns specified Zone zz's Group off/on/toggle.
• Has no effect if the zone is off.
• When group is turned off, all zones in group remain on.
Zones 01-08 = Groups 01-04
Zones 09-16 = Groups 05-08
Zones 17-24 = Groups 09-12
Zones 25-32 = Groups 13-16

Command:
&S12,GRP,zz,gg,a<cr>

Query:
&S12,GRP,zz,gg?<cr>

Reply:
&S12,GRP,zz,gg,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

gg: Group: 01-16

a:
0 = OFF
1 = ON

Examples:
• &S12,GRP,13,05,0<cr> turns Zone 13's Group 1 off.
• &S12,GRP,02,01?<cr> queries Zone 2's Group 1.
• &S12,GRP,13,07,1<cr> turns Zone 13's Group 07 on.

If Zone 2 and Zone 4 are the only zones in GRP 1 and you want to turn GRP 1 on from Zone 8 with Zone 4's source as the Group source, send &S12,GRP,04,01,1<cr>.

If you send &S12,GRP,03,01<cr> and Zone 3 is not in Group 1, YOU WILL get a &S12,ACK since the command structure is correct but no grouping will occur.

© ELAN Home Systems 2009 • All rights reserved.

KEY

Description:
These are the same commands as the S128P IR commands.

Command:
&S12,KEY,zz,abc<cr>

Query:
N/A

Reply:
N/A

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz:Zone: 01-32

abc:
000 = SYS OFF
001 = ZONE OFF
002 = ZONE ON
003 = ZONE TOG
010 = DND OFF
011 = DND ON
012 = DND TOG
013 = WHM OFF
014 = WHM ON
015 = WHM TOG
016 = MUTE OFF
017 = MUTE ON
018 = MUTE TOG
022 = DRC OFF
023 = DRC ON
024 = DRC TOG
025 = EQ FLAT
032 = TREB DOWN
033 = TREB UP
034 = BASS DOWN
035 = BASS UP
036 = VOLUME DOWN
037 = VOLUME UP
040 = GRP 1/5/9/13 OFF
041 = GRP 2/6/10/14 OFF
042 = GRP 3/7/11/15 OFF
043 = GRP 4/8/12/16 OFF
044 = GRP 1/5/9/13 ON
045 = GRP 2/6/10/14 ON
046 = GRP 3/7/11/15 ON
047 = GRP 4/8/12/16 ON
048 = SOURCE 1
049 = SOURCE 2
050 = SOURCE 3
051 = SOURCE 4
052 = SOURCE 5

© ELAN Home Systems 2009 • All rights reserved.

053 = SOURCE 6
054 = SOURCE 7
055 = SOURCE 8
056 = SOURCE 9
057 = SOURCE 10
058 = SOURCE 11
059 = SOURCE 12
060 = SOURCE LOCAL
064 = VIDEO1 1
065 = VIDEO1 2
066 = VIDEO1 3
067 = VIDEO1 4
068 = VIDEO1 5
069 = VIDEO1 6
070 = VIDEO1 7
071 = VIDEO1 8
072 = VIDEO1 9
073 = VIDEO1 10
074 = VIDEO1 11
075 = VIDEO1 12
076 = VIDEO1 13
077 = VIDEO1 14
078 = VIDEO1 15
079 = VIDEO1 16
149 = VIDEO1 TRACK
080 = VIDEO2 1
081 = VIDEO2 2
082 = VIDEO2 3
083 = VIDEO2 4
084 = VIDEO2 5
085 = VIDEO2 6
086 = VIDEO2 7
087 = VIDEO2 8
088 = VIDEO2 9
089 = VIDEO2 10
090 = VIDEO2 11
091 = VIDEO2 12
092 = VIDEO2 13
093 = VIDEO2 14
094 = VIDEO2 15
095 = VIDEO2 16
150 = VIDEO2 TRACK
096 = VIDEO3 1
097 = VIDEO3 2
098 = VIDEO3 3
099 = VIDEO3 4
100 = VIDEO3 5
101 = VIDEO3 6
102 = VIDEO3 7
103 = VIDEO3 8
104 = VIDEO3 9
105 = VIDEO3 10
106 = VIDEO3 11
107 = VIDEO3 12
108 = VIDEO3 13
109 = VIDEO3 14
110 = VIDEO3 15
111 = VIDEO3 16
151 = VIDEO3 TRACK
112 = VIDEO4 1
113 = VIDEO4 2
114 = VIDEO4 3
115 = VIDEO4 4
116 = VIDEO4 5
117 = VIDEO4 6
118 = VIDEO4 7
119 = VIDEO4 8
120 = VIDEO4 9
121 = VIDEO4 10
122 = VIDEO4 11
123 = VIDEO4 12
124 = VIDEO4 13
125 = VIDEO4 14
127 = VIDEO4 16
152 = VIDEO4 TRACK
128 = VIDEO5 1
129 = VIDEO5 2
130 = VIDEO5 3
131 = VIDEO5 4
132 = VIDEO5 5
133 = VIDEO5 6
134 = VIDEO5 7
135 = VIDEO5 8
136 = VIDEO5 9
137 = VIDEO5 10
138 = VIDEO5 11
139 = VIDEO5 12
140 = VIDEO5 13
141 = VIDEO5 14
142 = VIDEO5 15
143 = VIDEO5 16
153 = VIDEO5 TRACK
144 = COMPONENT A
145 = COMPONENT B
146 = COMPONENT C
147 = COMPONENT D
148 = COMPONENT E
154 = COMPONENT TRACK
160 = 16X16 VID OUT 01
161 = 16X16 VID OUT 02
162 = 16X16 VID OUT 03
163 = 16X16 VID OUT 04
164 = 16X16 VID OUT 05
165 = 16X16 VID OUT 06
166 = 16X16 VID OUT 07
167 = 16X16 VID OUT 08
168 = 16X16 VID OUT 09
169 = 16X16 VID OUT 10
170 = 16X16 VID OUT 11
171 = 16X16 VID OUT 12
172 = 16X16 VID OUT 13
173 = 16X16 VID OUT 14
174 = 16X16 VID OUT 15
175 = 16X16 VID OUT 16

© ELAN Home Systems 2009 • All rights reserved.

176 = 16X16 VID IN 01
177 = 16X16 VID IN 02
178 = 16X16 VID IN 03
179 = 16X16 VID IN 04
180 = 16X16 VID IN 05
181 = 16X16 VID IN 06
182 = 16X16 VID IN 07
183 = 16X16 VID IN 08
184 = 16X16 VID IN 09
185 = 16X16 VID IN 10
186 = 16X16 VID IN 11
187 = 16X16 VID IN 12
188 = 16X16 VID IN 13
189 = 16X16 VID IN 14
190 = 16X16 VID IN 15
191 = 16X16 VID IN 16
192 = 16X16 CPN OUT A
193 = 16X16 CPN OUT B
194 = 16X16 CPN OUT C
195 = 16X16 CPN OUT D
196 = 16X16 CPN OUT E
197 = 16X16 CPN IN A
198 = 16X16 CPN IN B
199 = 16X16 CPN IN C
200 = 16X16 CPN IN D
201 = 16X16 CPN IN E
004 = PAGE OFF
005 = PAGE ON
006 = PAGE TOG
007 = DB OFF
008 = DB ON
009 = DB TOG

Examples:
- &S12,KEY,13,000<cr> turns System off.
- &S12,KEY,02,004<cr> turns Zone 2 Page off
- &S12,KEY,13,009<cr> turns Zone 13 Doorbell off to on or on to off.

MUT (Mute)

Description:
- Turns specified Zone zz
- Has no effect if the zone is off.

Command:
&S12,MUT,zz,a<cr>

Query:
&S12,MUT,zz?<cr>

Reply:
&S12,MUT,zz,a<cr>

© ELAN Home Systems 2009 • All rights reserved.

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: 0 = OFF
1 = ON
2 = TOG

Examples:
• &S12,MUT,13,0<cr> turns Zone 13's Mute off.
• &S12,MUT,02?<cr> queries Zone 2's Mute.
• &S12,MUT,13,1<cr> turns Zone 13's Mute on.
• &S12,MUT,13,2<cr> toggles Zone 13's Mute from on to off or off to on.

PG

Description:
• Turns specified PG off/on/toggle. This will initiate a PG that will route audio present at the S128P's Page In audio jack to zones that have PG enabled.
• Works if the System/Zone is on or off.
• Only Chassis 1 will respond.

Command:
&S12,PG,a<cr>

Query:
&S12,PG?<cr>

Reply:
&S12,PG,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

a: 0 = OFF
1 = ON
2 = Toggle

Examples:
• &S12,PG,1<cr> turns Page on.
• &S12,PG?<cr> queries Page status.
• &S12,PG,2<cr> toggles Page from on to off or off to on.

PWR (Power)

Description:
• Turns specified Zone zz off/on/toggle.
• Zone turns on to last selected source.

Command:
&S12,PWR,zz,a<cr>

Query:
&S12,PWR,zz?<cr>

© ELAN Home Systems 2009 • All rights reserved.

Reply:
&S12,PWR,zz,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: 0 = OFF
1 = ON
2 = TOG

Examples:
• &S12,PWR,13,0<cr> turns Zone 13 off.
• &S12,PWR,02?<cr> queries Zone 2.
• &S12,PWR,13,1<cr> turns Zone 13 on.
• &S12,PWR,13,2<cr> toggles Zone 13 from on to off or off to on.

SRC (Source)

Description:
• Selects a specified Source ss in a Zone zz.
• Automatically switches audio and video as programmed in VIA!TOOLS or ELANTOOLS.
• If the zone is off, zone will turn on with ss = 01-13.

Command:
&S12,SRC,zz,ss<cr>

Query:
&S12,SRC,zz?<cr>

Reply:
&S12,SRC,zz,ab<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

ss: Source 01-13
00 is zone off
13 is local source

Examples:
• &S12,SRC,13,11<cr> selects Source 11 in Zone 13.
• &S12,SRC,02?<cr> queries Zone 2 for selected source.
• &S12,SRC,09,00<cr> turns Zone 9 off

SYSOFF (System Off)

Description:
• Turns all zones off.
• Only Chassis 1 will respond.

Command:
&S12,SYSOFF<cr>

© ELAN Home Systems 2009 • All rights reserved.

Query:
&S12,SYSOFF?<cr>

Reply:
&S12,SYSOFF,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

a: 0 = OFF
1 = ON

Examples:
• &S12,SYSOFF<cr> turns System off.
• &S12,SYSOFF?<cr> queries System status.
• &S12,SYSOFF,0<cr> S128P returns System is off.

TRE (Treble)

Description:
• Sets Zone zz to treble xyz.
• Increment Zone zz treble.
• Decrement Zone zz treble.
• Has no affect if zone is off.
• If sending 00, the + or - can be omitted.

Command:
&S12,TRE,zz,a<cr>
&S12,TRE,zz,xyz<cr>

Query:
&S12,TRE,zz?<cr>

Reply:
&S12,TRE,zz,xyz<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: + = Increments (plus symbol)
- = Decrements (minus symbol)

x: + Sets to positive number (plus symbol)
- Sets to negative number (minus symbol)

yz: 00 - 18
00 = Flat

Examples:
• &S12,TRE,+13,+<cr> Increments Zone 13's treble.
• &S12,TRE,02?<cr> queries Zone 2 for its treble.
• &S12,TRE,13,-03<cr> sets Zone 13's treble to -3
• &S12,TRE,13,00<cr> Zone 13 treble is flat.

© ELAN Home Systems 2009 • All rights reserved.

VOL (Volume)

Description:
- Sets Zone zz to volume abc.
- Increment Zone zz volume.
- Decrement Zone zz volume.
- Has no effect if zone is off.

Command:
&S12,VOL,zz,a<cr>
&S12,VOL,zz,abc<cr>

Query:
&S12,VOL,zz?<cr>

Reply:
&S12,VOL,zz,abc<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

a: + = Increments (plus symbol)
- = Decrements (minus symbol)

abc: 000 - 100
000 = Mute

Examples:
- &S12,VOL,13,+<cr> Increments Zone 13's volume.
- &S12,VOL,02?<cr> queries Zone 2 for its volume.
- &S12,VOL,13,19<cr> sets Zone 13's volume to 19.
- &S12,VOL,13,000<cr> mutes Zone 13.

WHM (Whole House Music)

Description:
- Turns specified Zone zz's WHM off/on/toggle.
- Has no effect if the zone is off.
- If zone is turned off, WHM is disabled.

Command:
&S12,WHM,zz,a<cr>

Query:
&S12,WHM,zz?<cr>

Reply:
&S12,WHM,zz,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

© ELAN Home Systems 2009 • All rights reserved.

a:
0 = OFF
1 = ON
2 = TOG

Examples:
• &S12,WHM,13,0<cr> turns Zone 13's WHM off.
• &S12,WHM,02?<cr> queries Zone 2's WHM.
• &S12,WHM,13,1<cr> turns Zone 13's WHM on.
• &S12,WHM,13,2<cr> toggles Zone 13's WHM from on to off or off to on.

Video Commands COR (Component Routing)

Description:
• Routes Unit u's Component Input Group i to
Component Output Group o.
• Used in 16x16 mode.
• Works if S128P is off or on.

Command:
&S12,COR,uoi<cr>

Query:
N/A

Reply:
N/A

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

u: Unit 1-4

o: Output A-E

i: Input A-E

Examples:
• &S12,COR,1,AE<cr> routes Unit 1 Component Input A to Component Output E.
• &S12,COR,4,BC<cr> routes Unit 4 Component Input B to Component Output C.
• &S12,COR,2,DA<cr> Routes Unit 2 Component Input D to Component Output A.

VID1 (Video 1)

Description: Switches S128P's Panel 1 in Zone zz to a specific Video ab.

Command:
&S12,VID1,zzab<cr>

Query:
&S12,VID1,zz?<cr>

Reply:
&S12,VID1,zzab<cr>

© ELAN Home Systems 2009 • All rights reserved.

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

ab: Input 01-16
00 = Track

Examples:
• S128P,VID1,0302<cr> S128P's Panel 1 in Zone 3 selects Input 2.
• &S12,VID1,29?<cr> Queries S128P's Panel 1 in Zone 29 for selected video input.
• &S12,VID1,0707<cr> S128P's Panel 1 in Zone 7 selects Input 7.
• &S12,VID1,0200<cr> Notifies S128P to place S128P's Panel 1 in Zone 2 in Tracking Mode.

VID2 (Video 2)

Description:
Switches S128P's Panel 2 in Zone zz to a specific Video ab.

Command:
&S12,VID2,zzab<cr>

Query:
&S12,VID2,zz?<cr>

Reply:
&S12,VID2,zzab<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

ab: Input 01-16
00 = Track

Examples:
• &S12,VID2,0302<cr> S128P's Panel 2 in Zone 3 selects Input 2.
• &S12,VID2,29?<cr> Queries S128P's Panel 2 in Zone 29 for selected video input.
• &S12,VID2,0707<cr> S128P's Panel 2 in Zone 7 selects Input 7.
• &S12,VID2,0200<cr> Notifies S128P to place S128P's Panel 2 in Zone 2 in Tracking Mode.

VID3 (Video 3)

Description:
Switches S128P's Panel 3 in Zone zz to a specific Video ab.

Command:
&S12,VID3,zzab<cr>

Query:
&S12,VID3,zz?<cr>

Reply:
&S12,VID3,zzab<cr>

© ELAN Home Systems 2009 • All rights reserved.

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

ab: Input 01-16
00 = Track

Examples:
• &S12,VID3,0302<cr> S128P's Panel 3 in Zone 3 selects Input 2.
• &S12,VID3,29?<cr> Queries S128P's Panel 3 in Zone 29 for selected video input.
• &S12,VID3,0707<cr> S128P's Panel 3 in Zone 7 selects Input 7.
• &S12,VID3,0200<cr> Notifies S128P to place S128P's Panel 3 in Zone 2 in Tracking Mode.

VID4 (Video 4)

Description:
Switches S128P's Panel 4 in Zone zz to a specific Video ab.

Command:
&S12,VID4,zzab<cr>

Query:
&S12,VID4,zz?<cr>

Reply:
&S12,VID4,zzab<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

ab: Input 01-16
00 = Track

Examples:
• &S12,VID4,0302<cr> S128P's Panel 4 in Zone 3 selects Input 2.
• &S12,VID4,29?<cr> Queries S128P's Panel 4 in Zone 29 for selected video input.
• &S12,VID4,0707<cr> S128P's Panel 4 in Zone 7 selects Input 7.
• &S12,VID4,0200<cr> Notifies S128P to place S128P's Panel 4 in Zone 2 in Tracking Mode.

VID5 (Video 5)

Description:
Switches S128P's Monitor in Zone zz to a specific Video ab.

Command:
&S12,VID5,zzab<cr>

Query:
&S12,VID5,zz?<cr>

Reply:
&S12,VID5,zzab<cr>

© ELAN Home Systems 2009 • All rights reserved.

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

zz: Zone: 01-32

ab: Input 01-16
00 = Track

Examples:
• &S12,VID5,0302<cr> S128P's Monitor in Zone 3 selects Input 2.
• &S12,VID5,29?<cr> Queries S128P's Monitor in Zone 29 for selected video input.
• &S12,VID5,0707<cr> S128P's Monitor in Zone 7 selects Input 7.
• &S12,VID5,0200<cr> Notifies S128P to place S128P's Monitor in Zone 2 in Tracking Mode.

VOR (Video Routing)

Description:
• Routes Unit u's Video Input ii to Output oo.
• Used in 16x16 mode.
• Works if S128P is off or on.

Command:
&S12,VOR,u,ooii<cr>

Query:
&S12,VOR,u,oo?<cr>

Reply:
&S12,VOR,u,ooii<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

u: Unit 1-4

oo: Output 01-16

ii: Input 01-16

Examples:
• &S12,VOR,1,1301<cr> routes Unit 1 Input 1 to Output 13.
• &S12,VOR,3,02?<cr> queries Unit 3's output 2.
• &S12,VOR,4,1316<cr> routes Unit 4 Input 16 to Output 13.
• &S12,VOR,2,1312<cr> routes Unit 2 Input 12 to Output 13.

© ELAN Home Systems 2009 • All rights reserved.

Query Commands

ASD (Audio Signal Detect)

Description:
• Queries Unit u Audio Source Inputs to determine if an audio signal is present.
• The S128P can either sense audio from the Left, Right or both Left and Right.
• The S128P can detect the audio instantaneously, how ever the it can take up to 30 seconds before the S128P detects the absence of audio once the audio isremoved.
• Works if System is off or on.

Command:
N/A

Query:
&S12,ASD,u?<cr>

Reply:
&S12,ASD,u,aaaaaaaaaaaa<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

u: Unit 1-4

a: 0 = Not Detected
1 = Detected

Examples:
• &S12,ASD,1?<cr> Queries Unit 1.
• &S12,ASD,2?<cr> Queries Unit 2.
• &S12,ASD,1,111111000000<cr> S128P Unit 1 reply. Audio Signals 1 thru 6 are ON and Audio Signal 7- 12 are OFF.
• &S12,ASD,2,000010001000<cr> S128P Unit 2 reply. Audio Signals 5 and 9 are ON, Audio Signals 1, 2,3, 4, 6, 7, 8, 10,
11 and 12 are OFF

LSD (Local Signal Detect)

Description:
• Queries Unit u Local Audio Source Inputs to determine if an audio signal is present.
• The S128P can either sense audio from the Left, Right or both Left and Right.
• The S128P can detect the audio instantaneously, how ever the it can take up to 30 seconds before the S128P detects
the absence of audio once the audio is removed.
• Works if System/Zone is off or on.
• If the S128P is queried immediately after connecting a Local Source, there is a possibility that the S128P will return all
Local Signals are on/detected &S12,LSD,1,11111111<cr>. Wait a few seconds before the S128P is queried after connecting a Local Source.

Command:
N/A

Query:
&S12,LSD,u?<cr>

Reply:
&S12,LSD,u,aaaaaaaa<cr>

© ELAN Home Systems 2009 • All rights reserved.

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

u: Unit 1-4

a: 0 = Not Detected
1 = Detected

Examples:
• &S12,LSD,1?<cr> Queries Unit 1.
• &S12,LSD,2?<cr> Queries Unit 2.
• &S12,LSD,1,11111100<cr> S128P Unit 1 reply. Local Audio Signals 1 thru 6 are ON and Local Audio Signal 7 and 8 are OFF.
• &S12,LSD,2,00001000<cr> S128P Unit 2 reply. Local Audio Signal 5 is ON, Local Audio Signals 1, 2, 3, 4, 6, 7 and 8
are OFF.

PGD (Page Detect Query)

Description:
• Queries Unit u to determine if the Page Trigger In jack is active.
• If all zones in a chassis/system do NOT have PG enabled, this command will still return the correct status of the Page Trigger In jack.
• PG enabled is programmed in VIA!TOOLS or ELANTOOLS S128P Init Screen Zones page.
• Works if System is off or on.

Command:
N/A

Query:
&S12,PGD,u?<cr>

Reply:
&S12,PGD,u,a<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

u: Unit 1-4

a: 0 = Off/Inactive
1 = On/Active

Examples:
• &S12,PGD,1?<cr> Queries Unit 1.
• &S12,PGD,2?<cr> Queries Unit 2.
• &S12,PGD,1,0<cr> S128P Unit 1 reply. Page Trigger In jack is Off/Inactive.

© ELAN Home Systems 2009 • All rights reserved.

STI (Sense Trigger Inputs)

Description:
- Queries Unit u's Sense Trigger Inputs to determine if they are on or off.
- You must have the expansion cable connected if more than one chassis is in the system. If you do not, the returned data will not be reliable.

Command:
N/A

Query:
&S12,STI,u?<cr>

Reply:
&S12,STI,u,aaaaaa<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

u: Unit 1-4

a: 0 = OFF
1 = ON

Examples:
- &S12,STI,1?<cr> Queries Unit 1.
- &S12,STI,2?<cr> Queries Unit 2.
- &S12,STI,1,111111<cr> S128P Unit 1 reply. All Sense Trigger Inputs are ON.
- &S12,STI,2,000010<cr> S128P Unit 2 reply. Sense Trigger Input 5 ON, Sense Trigger Inputs 1, 2, 3, 4 and 6 OFF.

VSD (Video Signal Detect)

Description:
- Queries Unit u Video Inputs to determine if a video signal is present.
- The S128P can either sense audio from the Left, Right or both Left and Right.
- The S128P can detect the video instantaneously and detect the absence of video instantaneously.
- Works if System is off or on.

Command:
N/A

Query:
&S12,VSD,u?<cr>

Reply:
&S12,VSD,u,aaaaaaaaaaaaaaaa<cr>

Parameters:
<cr>: carriage return: Hexadecimal 0x0D or Decimal 13

u: Unit 1-4

a: 0 = Not Detected
1 = Detected

© ELAN Home Systems 2009 • All rights reserved.

Examples:

- &S12,VSD,1?<cr> Queries Unit 1.
- &S12,VSD,2?<cr> Queries Unit 2.
- &S12,VSD,1,1111110000000000<cr> S128P Unit 1 reply. Video Signals 1 thru 6 are ON and Audio Signal 7-16 are OFF.
- &S12,VSD,2,0000100010000101<cr> S128P Unit 2 reply. Video Signals 5, 9, 14 and 16 are ON, Audio Signals 1, 2, 3,
  4, 6, 7, 8, 10, 11, 12, 13 and 15 are OFF.

© ELAN Home Systems 2009 • All rights reserved.

Appendix D: Rack Mounting

Rack-Mount Brackets

When mounting the S128P controller in an equipment rack, use the included Rack Mount Bracket for secure mounting and proper ventilation. The S128P requires four rack spaces. To install the S128P into a standard 19" equipment rack:

1. Slide the rack bracket onto the S128P chassis from the front as shown in ***Figure D-1***.

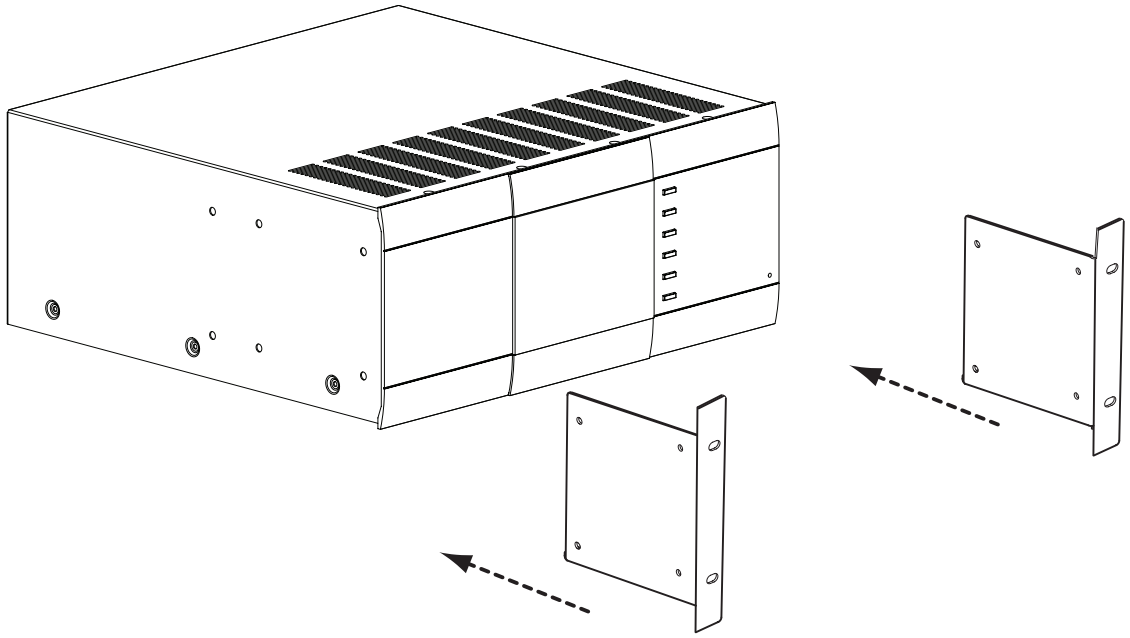


Figure D-1

2. Ensure that the unit is flush with the front of the mounting kit. Install each of the eight screws (included) through the side mounting flanges into the holes in the sides of the unit as shown in ***Figure D-2***. Hand tighten screws! Over-tightening could cause damage to the S128P Controller.

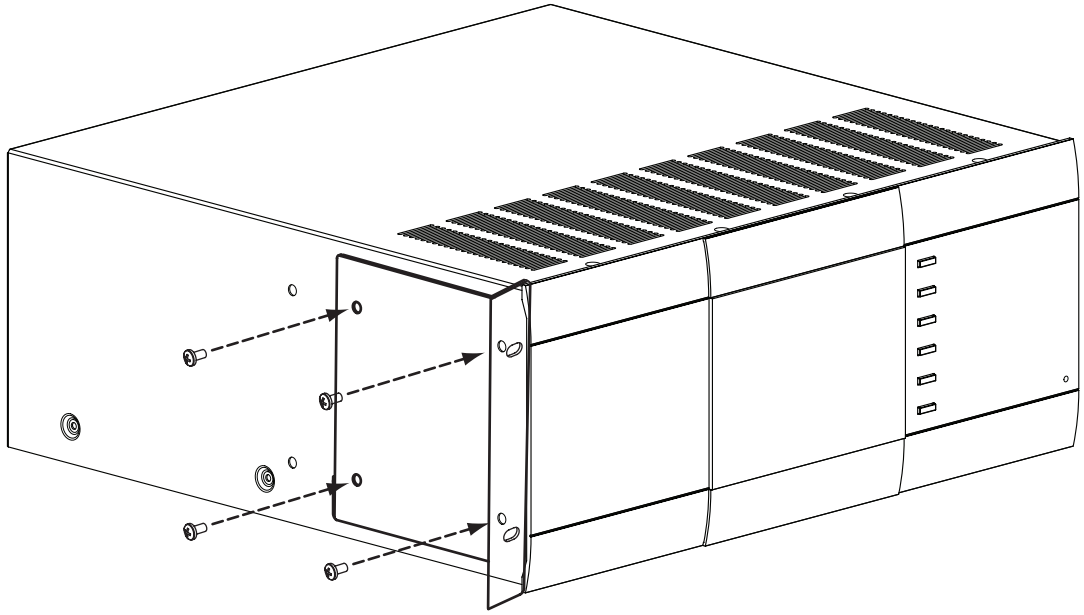


Figure D-2

© ELAN Home Systems 2009 • All rights reserved.

3. Once the brackets are securely mounted, install the entire assembly into a standard 19” equipment rack from the front using four rack screws (not included) as shown in ***Figure D-3***.

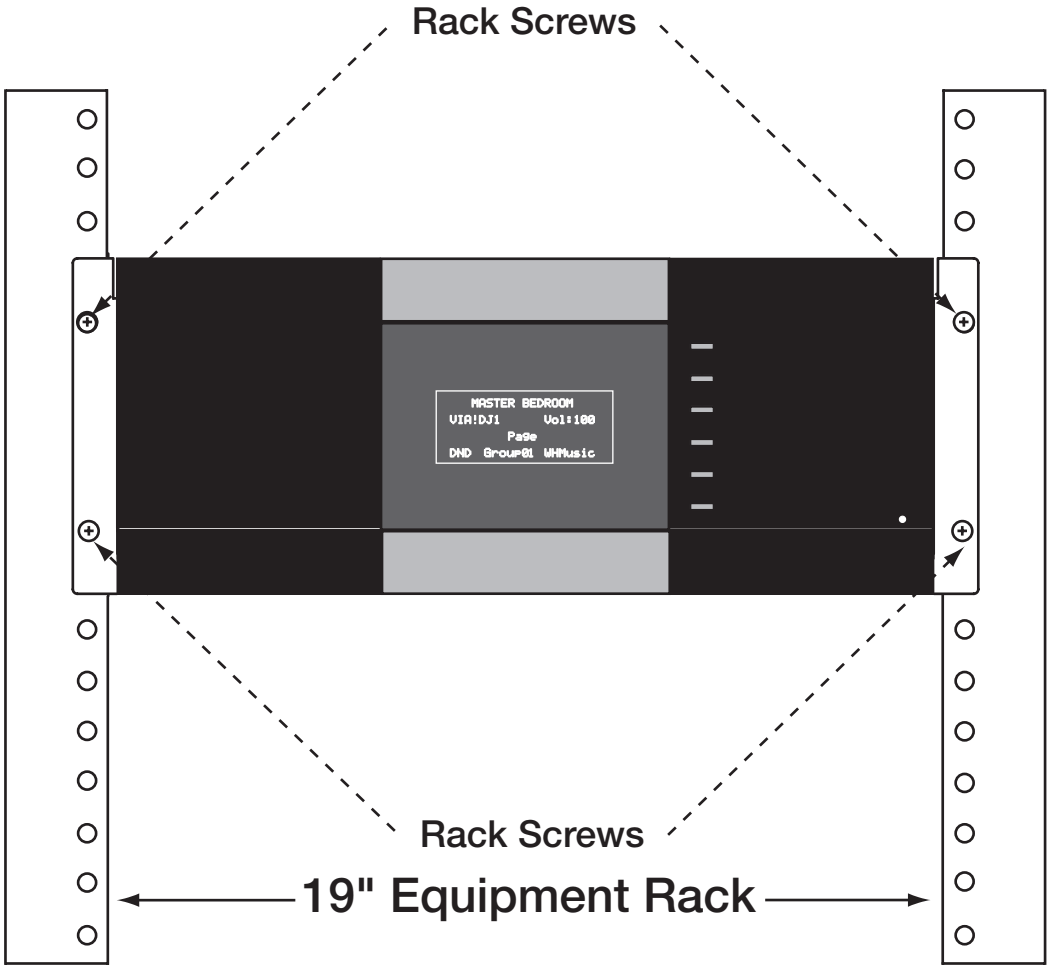


Figure D-3

© ELAN Home Systems 2009 • All rights reserved.

Notes:

© ELAN Home Systems 2009 • All rights reserved.

Limited Warranty

ELAN HOME SYSTEMS L.L.C. ("ELAN") warrants the S128P to be free from defects in materials and workmanship for the period of two years (2 years) from date of purchase. If within the applicable warranty period above purchaser discovers that such item was not as warranted above and promptly notifies ELAN in writing, ELAN shall repair or replace the item at the company's option. This warranty shall not apply (a) to equipment not manufactured by ELAN, (b) to equipment which shall have been installed by other than an ELAN authorized installer, (c) to installed equipment which is not installed to ELAN's specifications, (d) to equipment which shall have been repaired or altered by others than ELAN, (e) to equipment which shall have been subjected to negligence, accident, or damage by circumstances beyond ELAN's control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or other catastrophic events beyond ELAN's control, or to improper operation, maintenance or storage, or to other than normal use of service. With respect to equipment sold by, but not manufactured by ELAN, the warranty obligations of ELAN shall in all respects conform to the warranty actually extended to ELAN by its supplier. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation or other expenses which may be incurred in connection with repair or replacement.

Except as may be expressly provided and authorized in writing by ELAN, ELAN shall not be subject to any other obligations or liabilities whatsoever with respect to equipment manufactured by ELAN or services rendered by ELAN.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES EXCEPT WARRANTIES OF TITLE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

ATTENTION: TO OUR VALUED CONSUMERS
To ensure that consumers obtain quality pre-sale and after-sale support and service, ELAN Home Systems products are sold exclusively through authorized dealers. *ELAN products are not sold online.* The warranties on ELAN products are NOT VALID if the products have been purchased from an unauthorized dealer or an online E-tailer. To determine if your ELAN reseller is authorized, please call ELAN Home Systems at (859) 269-7760.

HOME SYSTEMS

1300 E. New Circle Rd. Ste. 150 Lexington, KY 40505

www.elanhomesystems.com

PN# 9900989 REV. A